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GENERAL STUDIES (TEST CODE : 2363)

Name of Candidate	KSHITIJ ADITYA SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	45933652
Center	ONLINE	Date	31-08-2024

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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11	15	
12	15	
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17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	**Strongly Recommended**

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EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

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All the Best

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1. प्राचीन काल में भारतीय संस्कृति के विदेशों में प्रसार के विभिन्न माध्यम क्या थे? (उत्तर 150 शब्दों में दीजिए)

What were the various modes through which Indian culture spread abroad in the ancient period? (Answer in 150 words) 10

Starting from the 3rd — 4th century BC, Indian culture gradually spread across Asia Minor and even reached as far as greece, and even to south east asia.

Modes of spread of culture

① Along the silk route. The control of the route by Kushans helped spread Buddhism to Bactria and beyond.

② Greek travellers like Heliodorous came to India and adopted vaishnavism during Sunga Period.

③ The Sangam kings had very wide trade with Egypt & Rome which

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helped spread of culture. ~~Tag~~ Statue of Laxmi found at Pompeii.

(4) During the Kushana Period, Nagarjuna travelled ~~the~~ to Japan to spread Mahayana Buddhism.

(5) Travellers like Fa Hien & Xuanzang also helped the spread of Indian culture.

(6) In Kalinga, the ancient Bali Yatra of tradesmen was a major route of cultural contact from 5th century AD.

(7) Similarly, the Chaulukyas of Gujarat and Rashtrakutas also sent their ambassadors to Arabia.

Thus, people to people contact, trade and spread of faith were the key modes of spread of culture.

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2. पूंजीवादी अनिवार्यताओं से प्रेरित औपनिवेशिक आर्थिक नीतियों ने भारत में अकाल की स्थितियां उत्पन्न करने के साथ-साथ उन्हें और भी बदतर बना दिया। उदाहरण सहित व्याख्या कीजिए। (उत्तर 150 शब्दों में दीजिए)

Colonial economic policies, driven by capitalist imperatives, created and even exacerbated the conditions for famines in India. Explain with examples. (Answer in 150 words) 10

The British mercantilist policies revolved around the development of Britain at the cost of the colonies rather than shared growth. This altered the fundamental nature of Indian agriculture.

colonial era capitalist policies and role in creating famines

① The new land revenue systems focussed on profit maximisation rather than actually boosting agricultural growth.

② The administrative setup of cornwallis was aimed at revenue generation as key priority.

③ Introduction of Railways primarily for

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draining produce out of the rural economy.

(4) Focus on cash crops like opium, tea and cotton at the cost of food grains. Eg Deccan famine

(5) Diversion of resources during the wars creating deliberate scarcity.
Eg Great Bengal famine - 1940s.

(6) Destruction of crafts industry creating more land stress as workers moved to agriculture.

(7) Low / no focus on actually enhancing land productivity led to decline of actual productivity in colonial era

Thus, the British policies were aimed at the drain of Indian wealth, inundating in agriculture, even at the cost of food insecurity & famines.

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3. वर्तमान में, भारत में प्राप्त नागरिक स्वतंत्रताएं भारतीय राष्ट्रीय आंदोलन के राजनीतिक मूल्यों और आदर्शों का प्रत्यक्ष प्रतिबिंब हैं। उदाहरण सहित विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

The civil liberties enjoyed in India today are a direct reflection of the political values and ideals of the Indian National Movement. Discuss with examples. (Answer in 150 words) 10

If the constitution is a reflection of the aspirations of our freedom fighters for civil rights, the freedom struggle itself is the source of these aspirations.

Origin of civil liberties in the freedom movement

(1) As far back as 1895, Tilak had put forth the Swaraj Bill on fundamental rights.

(2) The INC was formed in 1885 with an aspiration for basic rights.

(3) The Nehru Report of 1928 focussed on 14 fundamental rights and a secular constitution.

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(4) Similarly, the Karachi session (1931) look up an agenda on the discussion of basic rights for Indians.

(5) Various leaders like Sarojini Naidu petitioned the British for gender parity in rights.

(6) Further the Sarda Act of 1929 also sought to grant basic reproductive autonomy to women.

(7) Article 17 flows directly from Ambedkar's quest against untouchability.

(8) Articles 25–28 reflect the secular origins of our freedom struggle.

(9) Article 22 was introduced to ensure that preventive detention is not abused.

Thus, the constitution is a reflection of the wisdom of our leaders and their own struggle for rights.

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4. इजरायल और फिलिस्तीन के बीच बहु-दशकीय संघर्ष को वर्तमान समय में भी उग्र बनाए रखने के लिए कौन-से कारक उत्तरदायी हैं? (उत्तर 150 शब्दों में दीजिए)

What are the factors that have kept the multi-decadal conflict between Israel and Palestine raging even in contemporary times? (Answer in 150 words) 10

The flame ignited by the Balfour Declaration of 1917 continues to burn to this day in the middle east due to various factors.

Factors sustaining the conflict

① Failure of the UN Partition Plan, 1948 to create peace

② Role of Arab polities and Iran in maintaining tensions.

③ Israel's apartheid policies as denounced by the ICJ in the Israeli wall case.

④ Failure of the Oslo accords.

⑤ Rise of Hamas at the cost of the PLO which worked towards peace & recognised Israel.

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(6) Israel's own hyper-aggressive politics and expansion into West Bank.

Way forward

(1) The Oslo Peace Process has to be revived at all costs

(2) Israel should stop colonisation of the West Bank through settler colonies.

(3) Drying out sources of funding to Hamas.

(4) The 1967 boundary lines should be restored.

(5) a responsible democratic government in Palestine through free elections.

Thus, the tortuous path to peace has to be laid out through peace negotiations & suppression of violence.

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5. भूमध्य सागर के निकटवर्ती क्षेत्रों में स्थानीय पवनें अधिक प्रभावी क्यों हैं? ये क्षेत्रीय जलवायु और स्थानीय आबादी के जीवन को कैसे प्रभावित करती हैं? (उत्तर 150 शब्दों में दीजिए)

Why is there a prominence of local winds in regions around the Mediterranean Sea? How do they influence regional climates and the lives of local populace? (Answer in 150 words) 10

The unique characteristics of the warm Mediterranean sea, Sahara desert and the european relief create several local wind systems.

Reasons for prominence of wind systems -

① Mistral flowing down the Alps gets warm due to adiabatic press.

② Khamsin blows warm winds from the Egyptian desert

③ The warm mediterrean sea creates an intense low pressure system.

④ winds blowing from the Sahara to europe create 'blood rains' due to the red dust.

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(5) In the winters, the western disturbances are generated due to the westerly jet stream.

Impact on regional climate and life

(1) Help promote a warmer and pleasant weather in south France and Italy.

(2) growth of horticulture in Italy aided by the local winds.

(3) Winter rainfall helps the wheat harvest.

(4) However, in recent years, there has been a rise in cyclones in the Mediterranean sea due to global warming.

Thus, the local winds have helped ~~be~~ define the unique culture of the region for centuries.

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6. पारिस्थितिकी तंत्र और भौगोलिक क्षेत्रों पर चक्रवातों के सकारात्मक पर्यावरणीय प्रभाव का वर्णन कीजिए। (उत्तर 150 शब्दों में दीजिए)

Explain the positive environmental impact of cyclones on ecosystems and geographical areas. (Answer in 150 words) 10

While primarily a destructive force, cyclones can have positive impacts on local ecology, livelihoods and weather patterns.

Positive impact on ecosystems

1. They have acted as agents of spread of vegetation across oceans to remote islands.
2. Allow for creative destruction of mangroves.
3. Reduce silt accumulation around shores aiding coral growth.
4. Bring rainfall with them, thereby helping the forests grow.

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Impacts on geographical areas

① Monsoons are driven by cyclonic circulations.

② The tropical cyclone belt is one ~~to~~ of the most densely populated belts of the world

However with growing trend of erratic cyclones, especially in the Arabian sea, there is a need to ensure disaster preparedness to mitigate their adverse impacts.

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7. 'संसाधन अभिशाप (Resource Curse)' की अवधारणा की व्याख्या कीजिए। क्या आपको लगता है कि किसी एक संसाधन पर अत्यधिक निर्भरता उस देश के विकास में बाधा बन सकती है? (उत्तर 150 शब्दों में दीजिए)

Explain the concept of 'resource curse'. Do you think over dependence on a single resource can hinder a country's development? (Answer in 150 words) 10

Resource curse refers to the relative underdevelopment of resource rich states despite their vast potential for economic growth. Eg Jharkhand

Reasons for resource curse

① corruption and diversion of resources

② Displacement of locals and removal from the growth process.

③ Destruction of local ecology and traditional livelihoods.

Risks of single resource dependence

① Increases vulnerability of growth due to dependence on one resource.

② can create inequalities between the

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haves & have nots.

(3) diversification is required for long term sustainability.
Eg ~~Dut~~ UAE diversifying away from oil to tourism.

(4) vulnerable to demand fluctuations
Eg Malaysia & palm oil

Way forward

(1) sustain traditional livelihoods & monetise them eg MP govt vana dhan scheme

(2) Use of District mineral Foundation to promote inclusive growth.

(3) gradual diversification beyond one single resource.

Thus, a single resource can kick-start growth but cannot sustain it. Meeting SDG-11 & 12 requires a wider basket of economic activities.

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8. भारत के बड़े शहरों जैसे कि चेन्नई, बेंगलुरु आदि में जल संकट के कारणों की पहचान कीजिए। इस संकट का समाधान करने के लिए उपचारात्मक उपाय सुझाइए। (उत्तर 150 शब्दों में दीजिए)

Identify the causes of water crisis in India's mega cities such as Chennai, Bengaluru, etc. Suggest remedial measures to overcome this crisis. (Answer in 150 words) 10

As per CGWA, 2/3 of India's districts are water stressed. This problem is only worse in ~~eg~~ major urban centres.

Causes for urban water crises

1. construction has severely harmed the percolative capacity of soil
2. encroachment over major water bodies, lakes & rivers. ~~Eg~~ Musi river in Hyderabad
3. urban green cover is rapidly disappearing. ~~Eg~~ Gurugram's urban concrete jungle
4. Low focus on water harvesting in most cities.
5. Erratic monsoons and climate change

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Way forward to tackle water crisis

① Promoting urban water user associations in societies.

② Municipal taxes on water supply should be increased

③ Retrofitting water harvesting systems & making it mandatory for new constructions.

④ Reducing the water use intensity of Indian agriculture

⑤ Unlike traditional water storage like Ponds or Baolis.

Thus, the urban water crisis is a self-imposed calamity. Resource use efficiency and efficient planning are crucial to mitigate this crisis.

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9. भारत में बदलती पारिवारिक व्यवस्था और मानदंडों को समझने में राज्य एवं बाजार की शक्तियों की भूमिका का विश्लेषण कीजिए। (उत्तर 150 शब्दों में दीजिए)

Analyse the role of the state and market forces in understanding the changing family system and norms in India. (Answer in 150 words) 10

Post the 1991 LPG reforms, the family dynamics have been modified by emergence of the market as a powerful actor & shrinking role of state.

Role of market forces

① Female employment has increased their empowerment.

② care function of families is being delegated to nannies.

③ Online bonding with friends and family ~~across~~ beyond geographical constraints, through social media.

④ Financial control of the patriarch has reduced.

⑤ celebrations have become commercialised.

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Role of the state

① Actively helped reduce female TFR to 2.0 as per NFHS-5.

② Pushed for female growth inclusion leading to rising female LFPR to 37% in 2023.

③ Nuclear families a result of migration to urban centres.

④ Helped reduce sex-selective abortion and greater acceptance of the girl child.

⑤ Several states are trying to regulate live-in relationships. ~~Eg~~ Uttarakhand UCC.

Thus family as an institution is being shaped by market & state forces. However, we need to ensure that our traditional values are not eroded.

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10. चिरकालिक निर्धनता में कमी किंतु हाल ही में निर्धनता से बाहर आए लोगों (newly non-poor) की सुभेद्यता में वृद्धि के मद्देनज़र, भारत उभरती हुई और सतत रूप से विद्यमान चुनौतियों से प्रभावी ढंग से निपटने के लिए अपनी सामाजिक सुरक्षा प्रणालियों को किस प्रकार पुनर्गठित कर सकता है? (उत्तर 150 शब्दों में दीजिए)

With a decline in chronic poverty but a rise in vulnerability among the newly non-poor, how can India restructure its social protection systems to address both emerging and persistent challenges effectively? (Answer in 150 words) 10

As per World Poverty Clock, India has successfully reduced extreme poverty below the goal of 3%, 7 years before the 2030 deadline.

However, new causes of vulnerability have emerged

① Increasing trend of feminisation of poverty.

② Climate change related vulnerability ~~Peg~~ from sea level rise

③ Rising urban insurmountability and quality of living constraints

④ Lack of a financial safety net as seen during the COVID-19 pandemic.

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(5) caste & class inequalities persist, & may be rising

Restructuring social protections

(1) consider shift towards UBI to ensure basic protection of all.

(2) economic survey has recommended a monopsony model of health insurance for all

(3) Promoting circular economy and responsible consumption through Lifi movement.

(4) Leveraging e-tech to improve quality of health and education services
~~Reg~~ e-Sanjeevani portal

(5) Promote WHO-recommended one-Health approach to reduce health risks.

Thus, our social protection system needs to be transformed to tackle modern challenges.

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11. तमिल क्षेत्र एवं उसके बाहर की राजनीतिक और सामाजिक-आर्थिक जानकारी प्रदान करने में संगम साहित्य के योगदान को स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

Explain the contribution of Sangam literature in providing political and socio-economic insights into the Tamil region and beyond. (Answer in 250 words) 15

The Sangam literature, originating with the three sangams at Madurai and Kapatapuram are a crucial window into ancient Tamil society & culture & even beyond it.

Political and socioeconomic insights

① crucial source of information on the political organisation of cheras, cholas and Pandyas.

② Rituals of Vattakiruttal or ritual suicide are described in the texts.

③ The presence of a caste system is detailed in these texts.

④ spread of Buddhism and Jainism in Tamil Nadu. Eg Manimekalai was

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a Buddhist nun herself.

(5) Division of land revenue into five categories has been described.

(6) Hero stone or nadu kal worship has been described.

(7) Presence of a feudalistic structure in the society.

(8) Descriptions of ancient religious practices and worship of Hindu deities like Murugan.

Information beyond Tamil society

(1) showed that they were aware of Northern kingdoms but contact was limited.

(2) crucial source of information on Roman trade in Asia, especially South Asia.

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(3) Also describe the contact of the Sangam kings with Egypt and Ethiopia.

(4) For instance, the Roman emporium at Arikamedu led to the discovery of wine amphorae, Roman coins and goods.

(5) contact with the rulers of Sri Lanka has also been described in the books.

(6) Further, they validate other historical sources like the Periplus of the Erythraean Sea, Historia Naturalis of Pliny, and even the Udayagiri inscriptions.

Thus, the Sangam literature, though incomplete and partly lost, is a crucial source of historical reconstruction

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12. पशु प्रतीकों पर विशेष बल देते हुए बौद्ध धर्म में प्रतीकात्मक भाषा के महत्त्व पर चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

Discuss the significance of symbolic language in Buddhism with special emphasis on animal symbols. (Answer in 250 words) 15

The use of natural and animal motifs in Buddhist art is a testament to its respect for natural life and connection to nature based on ahimsa towards all.

Significance of symbolic language

(1) In Hinayana Buddhism, personification of the Buddha was not allowed.

(2) Various Jataka stories like the Vidurpandit Jataka or Ruru Jataka use animal motifs.

(3) The story ~~of~~ of Buddha's birth shows Mayadevi being protected by an elephant.

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(4) In Ashokan pillars, too, various animals have been used to depict qualities of:

(a) Lion – roar of dhamma in all directions

(b) Bull – Birth of Buddha

(c) Horse – Mahabhinishkramana

(d) Elephant – Dream of Mayadevi

(5) In later narrative art, the Buddha is often seen around animals showing his compassion. Eg At Amravati stupa.

[Other forms of symbolism]

(1) The banyan tree represents the attainment of Nirvana.

(2) Footsteps are used to depict the Mahaparinirvana.

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(3) Symbolism of stupas themselves:

(a) Anda — Divine conception & ~~one~~ oneness

(b) 3 chattris — Buddha, dhamma & sangha

(c) Yasti — Separation of the divine and the mundane

(d) ~~Pat~~ Pradakshina path — Path of renunciation and sacrifice.

(4) The toranas also depict various Jataka tales as seen on the Sanchi stupa.

(5) Lastly, the mudras of the Buddha show his various divine qualities. ~~Teg~~ Bhumisparsha Mudra on the Mara vijaya depiction at Ajanta

Thus, the symbolism represents the key teachings of the Buddha and harmonises them with a focus on nature

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13. प्रथम विश्व युद्ध ने किस प्रकार भारतीय समाज के लगभग सभी वर्गों के लिए सामाजिक और आर्थिक व्यवधान उत्पन्न किए तथा स्वतंत्रता संग्राम हेतु बड़े पैमाने पर लामबंदी का मार्ग प्रशस्त किया? (उत्तर 250 शब्दों में दीजिए)

How did the First World War bring in social and economic disruptions for nearly all sections of the Indian society and lead to mass mobilisation for the independence struggle? (Answer in 250 words) 15

The First World War (1914 – 1919) created great socioeconomic upheaval that changed the direction of the freedom struggle and turned it into a popular quest for freedom.

Hardships brought by WW-1

① Rising inflation in India squeezed out the masses for basic amenities and food.

② The industrialists were denied benefit of this rising cost of goods.

③ In agriculture, the middlemen cornered all surplus profits.

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(4) As Bipin Chandra notes, the soldier was the farmer in uniform and shared the same struggles.

(5) The Defence of India Rules, 1915 brought about many abuses of civil rights.

(6) The Jallianwala Bagh massacre further created resentment.

(7) The humiliating Treaty of Sevres created new ground for struggle.

(8) Home Rule League movement was brutally suppressed.

Emergence of mass mobilisation

(1) Gandhiji effectively mobilised the anguish of the masses towards the freedom struggle.

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(2) Mobilisation of the Swaraj Sabha

(3) The Non cooperation Movement ~~was~~ saw wide participation from peasants, women, businessmen & minorities

(4) The Awadh Kisan Sabha also helped mobilise the farmers.

(5) Further the Russian Revolution also helped the workers organise for their causes. ~~Eg~~ Formation of AITUC by NM Joshi.

(6) The successes at Champaran and Ahmedabad widened the social base.

(7) The emerging communist groups also aided the rise of national consciousness

Thus, the World War I was a watershed moment towards the goal of Swaraj as an integral part of the Non cooperation Movement.

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14. भारत में दुग्ध उत्पादन में किन चुनौतियों का सामना करना पड़ता है? भारत में श्वेत क्रांति 2.0 कैसे साकार हो सकती है? (उत्तर 250 शब्दों में दीजिए)

What are the challenges faced in milk production in India? How can India bring about White Revolution 2.0? (Answer in 250 words) 15

India is the world's largest producer of milk as per the 2024 economic survey, yet its production has several structural challenges.

Challenges to Milk Production

1. Low productivity of desi cow breeds
2. Availability of high quality semen for hybridisation
3. Weak pasteurisation and storage infra
4. Limited R&D into new breeds of cows.
5. Extension services to farmers such as veterinarian assistance is weak

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(6) emergence of diseases like lumpy disease or foot & mouth disease

(7) Limited availability of quality fodder

(8) Animal insurance penetration is low.

Measures for White Revolution 2.0

(1) Promoting the production of fodder as a commercial crop like in western countries.

(2) Rural community forestry to increase feed availability.

(3) Reinvigorating the KVKs and ATMAs for better extension services.

(4) exploring PPP models in state owned companies for better profitability.

(5) Learning from the success of

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Nandini and Amul

(6) Availability of germseed should be promoted for use of better quality seeds by farmers.

(7) Promoting food processing in the sector to further increase the profitability.

(8) Certification of products to sanitary and phytosanitary measures to promote exports.

Thus, India already enjoys the benefits of one robust milk production. This can be further augmented to help double farmers' income.

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15. जलवायु परिवर्तन विश्व भर में उष्णकटिबंधीय वर्षावनों को किस प्रकार प्रभावित करता है? जलवायु परिवर्तन के हानिकारक प्रभावों से उन्हें बचाने के लिए क्या उपाय किए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

How does climate change impact tropical rainforests worldwide? What measures can be taken to safeguard them from detrimental effects of climate change? (Answer in 250 words) 15

As global temperatures rise by up to 2.7°C by 2100 [IPCC data], they can have wide ramifications on tropical rainforests and forest dwellers.

Impacts on tropical rainforests

1. Increased risk of forest fires
2. Reduced carbon sinks leading to exacerbation of global warming
3. Increased land degradation in forest areas due to rising sea levels and cyclones.
4. Land stress may increase due to influx of climate refugees.

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(6) Habitat fragmentation for wild animals and loss of biodiversity

(7) Loss of livelihood for forest dwelling communities.

Measures to safeguard tropical forests

(1) Promote joint forest management initiatives through local stewardship.

(2) compensatory afforestation should be made more effective and resilient

(3) Prevent the spread of arid zones into rainforest areas.
Eg Africa's great green wall

(4) Promoting silviculture for timber demand as allowed by wildlife amendment act, 2023.

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(5) Promoting community forestry, farm forestry and urban forestry.

(6) TN Godavarman case principle of once a forest, always a forest should be upheld.

(7) Active construction of carbon sinks in line with our INDCs under Paris Agreement

(8) Reclamation of wastelands and degraded patches.
Eg UP govt initiative for reclamation of ravine lands.

(9) Long term adaptation measures to prevent future loss.

Thus the forests offer significant ecological value to humans. To conserve them is to conserve our own economy and culture.

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16. भारत में औद्योगिक समूहों के उद्भव हेतु उत्तरदायी प्रमुख कारकों का उल्लेख कीजिए। इन समूहों के भीतर परिचालन करने से उद्यमों को क्या लाभ मिलता है? (उत्तर 250 शब्दों में दीजिए)

Mention the key factors responsible for the emergence of industrial clusters in India. What benefits do enterprises gain from operating within these clusters? (Answer in 250 words) 15

Industrial clusters spread across the nation are crucial for promoting employment-led growth and meeting the goal of USD 2 Trillion exports by 2030.

Factors responsible for emergence of industrial clusters

① access to ports and shipping infra

Eg G – Kolkata industrial cluster

② Presence of mineral deposits and development of mining industry. Eg H – Chota Nagpur cluster

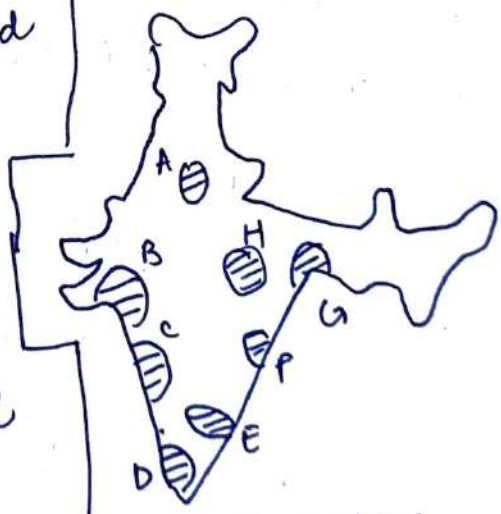

Fig. Industrial clusters

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③ availability of credit at reasonable cost and agglomeration economies
Eg C - Mumbai Pune cluster

④ conducive climatic factors for growth of plantations and spice production
Eg D - Kottayam cluster

⑤ suitable government policies and incentives. Eg B - Gujarat cluster.

⑥ Historical reasons and long-standing presence of industries.
Eg E - Chennai - Bangalore cluster.

Benefits arising out of clusters

① economies of scale reducing the cost of production

② easy access to global markets through ports and shipping infrastructure.

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(3) auxiliary services are easily available as needed.

(4) Promotes efficient use ~~of~~ of local resources and competitive advantages

(5) Promotion of large scale job creation through industries.

(6) Play a crucial role in export-led growth of the economy.

(7) Infrastructural growth creating a multiplier effect for the local economy.

(8) Easy access to labour at a single site through migrant & local workers.

Thus industrial clusters are engines of economic growth that are important for inclusive and equitable development.

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17. वस्त्र क्षेत्रक में भारत के अपने प्रतिस्पर्धियों की तुलना में खराब प्रदर्शन के लिए कौन-से कारण उत्तरदायी हैं? भारत इस श्रम-प्रधान उद्योग में किस प्रकार प्रतिस्पर्धी बन सकता है? (उत्तर 250 शब्दों में दीजिए)

What are the reasons behind India's underperformance in the textile sector compared to its competitors? How can India become competitive in this labour-intensive Industry. (Answer in 250 words) 15

India's textile sector is the second largest source of employment in the industrial sector yet it suffers from various challenges limiting its potential.

Reasons for India's underperformance in textile sector

1. Most enterprises are MSMEs with low economies of scale.
2. Fragmented nature and spread across the country.
3. Low specialisation into new fibres and specialty textiles. eg Hazmat suits
4. Dependence on china for quality dyes and machinery.

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(5) Low levels of skilling of employees limiting their productivity.

(6) Most production goes into local demand with little exportable surplus.

(7) Intf competition from China Vietnam and Bangladesh.

Improving ~~cost~~ competitiveness

(1) Promoting the formalisation & expansion of MMEs.

(2) Better training and skilling to workers through PPP models.

(3) Developing large industrial clusters for textile production.

(4) Promoting R&D into new materials and specialty textiles.

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(5) Promoting FDI in the textile sector to promote growth.

(6) Promotion of traditional textiles and fabrics like chanderi silk sarees or chikankari dresses. etc.

(7) Reducing the logistical costs of exports below 10% to make them more cost effective

government schemes
- → PM MITRA Parks
- → AUTUFS
- → PLI scheme for specialty textiles
- → SAMARTH scheme
- → ODOP

Thus, the textile industry can not only promote economic growth, but also boost our global cultural imprint.

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18. वर्ष 2050 में भारत की लगभग 20% जनसंख्या के 60 वर्ष से अधिक आयु के होने की संभावना है, इसके मद्देनज़र क्या आपको लगता है कि भारत के लिए 'सिल्वर डिविडेंड' की अवधारणा को अपनाने का यह सही समय है? सिल्वर डिविडेंड से लाभ प्राप्त करने हेतु भारत द्वारा कौन-से उपाय अपनाए जाने चाहिए? (उत्तर 250 शब्दों में दीजिए)

With around 20% of India's population expected to be over 60 years old in 2050, do you think it is the right time for India to embrace the concept of 'silver dividend'? What measures should India take to reap the benefits of this dividend? (Answer in 250 words) 15

While India is enjoying a demographic dividend now, it should brace for a silver tsunami to ensure that inclusive growth is not harmed.

Reasons for embracing silver ~~tsu~~ dividend

(1) Prevent impoverishment of the elderly, especially of women.

(2) Leverage their wide expertise and knowledge productively.

(3) Development of an elderly care market based on their own needs and inputs.

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④ Help in skilling the new generation of workers and enhancing their competitiveness.

⑤ Promote self-reliance of elderly rather than depending on others.

⑥ Reduces isolation and development of mental health issues.

Measures required to reap the dividend

① Promote digital literacy among the elderly.

② Enable work from home through online work. Eg Teaching jobs through ed-tech platforms.

③ Economic survey 2024 argues for the development of a care economy for the elderly.

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(4) Focus on geriatric and palliative care to enhance their productivity.

(5) Promotion of startups in the care economy space. ~~Eg~~ 'The goodfellows' funded by Tata group.

(6) Tackle ageism in hiring by private companies.

government initiatives
- → eldercare helpline
- → Vayoshri scheme
- → SAGE scheme
- → SACRED initiative

Thus, we must draw on our own culture of respect and learning from elders to ensure that they become a part of our development process rather than mere beneficiaries.

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19. भारत में प्रौद्योगिकी ने महिलाओं को पितृसत्तात्मक बाधाओं को दूर करने और परंपरागत भूमिकाओं से परे अपनी भागीदारी का विस्तार करने में किस प्रकार सक्षम बनाया है? (उत्तर 250 शब्दों में दीजिए)

How has technology enabled women to overcome patriarchal constraints and expand their engagement beyond traditional roles in India? (Answer in 250 words) 15

Technology has been a critical enabler of female financial inclusion, empowerment and is aiding their active contribution in all spheres beyond traditional mores.

Role of technology in overcoming patriarchal constraints

① Spread of progressive ideas through technology has directly challenged patriarchal biases. ~~Peg~~ Through social media

② More economic opportunities for women.

③ Better access to education and hand-holding where required.

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(4) Remote work has helped manage dual burden.

(5) Online tools, trackers and apps have helped promote safety outside the house. Eg SHe-Box initiative.

(6) The #MeToo movement online has also raised awareness of their unique concerns.

(7) Female businesses have easier access to credit.

(8) SHGs and voluntary groups get greater market access.
Eg Amazon Sakhi initiative

Way forward to augment participation further

(1) Newly launched Unified lending interface of RBI can be used to give even more access to credit.

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(2) Promote platformisation of female gig workers to increase visibility

(3) Leverage ONDC to further boost access to consumers.

(4) National Digital University should launch more courses for specific training & skilling goals.

(5) Promoting financial and digital literacy of women.

(6) NCAER has recommended a dedicated regulator like MUDRA for SHGs to enable their growth.

Thus, technology can further help boost female LFPR from current 37% and achieve the goal of SDG-5 and SDG-10.

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20. क्या आपको लगता है कि भारत में क्षेत्रवाद मुख्य रूप से कई अलग-अलग भाषाई पहचानों के अस्तित्व का परिणाम रहा है? उदाहरण सहित विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

Do you think that regionalism in India has mainly been a result of existence of multiple distinct linguistic identities? Discuss with examples. (Answer in 250 words) 15

Regionalism, or a sense of primacy to one's own culture or regional identity, has various facets in India, with language ~~bit~~ being only one of them.

Role of languages in regionalism

① very first demand for statehood - Visalandhra Movement was based on language.

② The English - Hindi official language controversy further inflamed the issue.

③ In the south, Tulu identity remains a basis for statehood demand.

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(4) Most states like Gujarat (1960), Haryana (1966), etc have been created on the basis of linguistic identity.

However, there are various other causes for regionalism

(1) Unique culture and traditions
eg Meghalaya out of Assam

(2) Regional disparities of growth
eg Telangana out of Telugu speaking AP.

(3) Protection of tribal culture and identity. eg Jharkhand

(4) Discontent due to resource diversion to other areas eg Chattisgarh

(5) New demands like Bundelkhand, or Harit Pradesh or Vidarbha have no strict linguistic basis

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Way forward to address regionalistic demands

① adherence to the Fazl Ali committee criteria.

② Promoting national integration through schemes like Ek Bharat Shresth Bharat.

③ AIS should actively promote a feeling of oneness in states of posting.

④ Reinvigorate zonal councils under SRA, 1956 and the NE council.

⑤ Promote regionally balanced growth even within states.

Thus, we need to realise our fundamental duty under Article 51A(c) to uphold the sovereignty, unity & integrity even in domestic regional politics.

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GENERAL STUDIES (TEST CODE : 2365)

Name of Candidate	KSHITIJ ADITYA SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	45933652
Center	ONLINE	Date	06-09-2024

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
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10	10	
11	15	
12	15	
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16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	**Strongly Recommended**

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EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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All the Best

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Q1. प्रभावी एवं न्यायसंगत भूमि सुधारों की अनुपस्थिति ने भारत में गरीबी की निरंतरता में कैसे योगदान दिया है?

How has the absence of effective and equitable land reforms contributed to the persistence of poverty in India? (Answer in 150 words) 10

The economic survey 2024 highlights that 89.4% farmers have less than 2 ha of land, in part due to the failure of land reforms such as land ceiling laws & redistribution.

Reasons for inequitable land reforms
- → Opposition from Swatantra Party
- → Long court cases
- → collusion of local bureaucracy
- → Variable ceiling limits across states.

Consequence of ineffective land reforms

① Poor economies of scale in Indian agriculture due to small holdings.

② Lack of proper land records and

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lack of conducive titling of land.

(3) Limited the scope of green Revolution during the 1960s & 70s to only a few parts in west & south.

(4) ICOR of agricultural inputs remains high

(5) Problems in collection of land tax in rural areas due to lack of clear records.

(6) challenges of credit access due to small holdings.

Way forward
- land pooling [Vietnam Model]
  - ↳ small farmers large field
- Bhu-Aadhar for clear titling
- promotion of cooperatives & FPOs.

Thus, to achieve the goal of doubling farmer income and productivity, land use reforms would be the first step.

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Q2. यूनिफाइड पेमेंट इंटरफेस (UPI) ने भारत में वित्तीय समावेशन को किस प्रकार बढ़ावा दिया है? टिप्पणी कीजिए।

Comment on how the Unified Payment Interface (UPI) has unleashed financial inclusion in India. (Answer in 150 words) 10

UPI was launched by NPCI in 2016. As per RBI, India has achieved a score of 64/100 in Financial Inclusion Index, 2024, aided by UPI's growth.

UPI - unleashing financial inclusion

① Reduced the cash crunch in rural areas due to low ATM access.

② Increased speed of payment settlement reducing payment delays.

③ UPI Lite has removed the barriers of intermittent internet access.

④ UPI 123 PAY helps users with basic phones also access UPI.

⑤ Credit line on UPI helps access to

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short term credit as overdraft.

(6) overall ease of doing business for small vendors has increased due to UPI.

(7) It has given a sense of confidence in online payments due to Aadhaar linkage.

(8) Reduced dependence on banks for basic financial transactions.

Way forward to further increase financial inclusion
- → Increase limits on UPI Lite
- → Linking UPI & ULI (launched Sept 2024) for credit access.
- → Promote digital literacy (only ~38% in 2023)

Thus, as World Bank notes, India has achieved 5 decades of progress in a single decade in financial inclusion via UPI.

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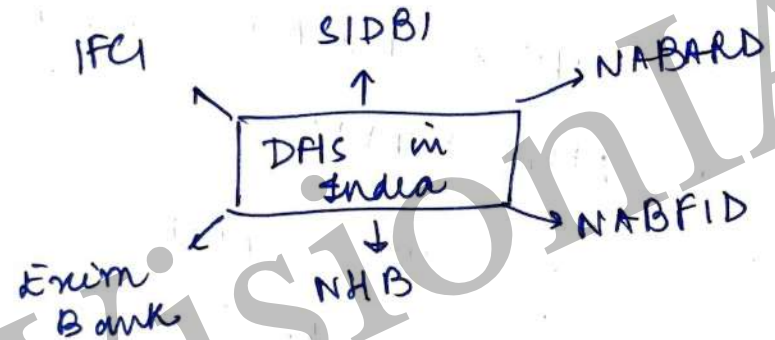
Q3. भारत की आर्थिक संवृद्धि और अवसंरचना के विकास को सहायता प्रदान करने में विकास वित्त संस्थानों (DFIs) की भूमिका पर चर्चा कीजिए।

Discuss the role of Development Finance Institutions (DFIs) in supporting India's economic growth and infrastructure development. (Answer in 150 words) 10

DFIs are large credit institutions that promote growth in specified sectors through lending to institutional players rather than to consumers directly.



role in supporting growth & infrastructure development

① Provide backstop guarantees to reduce financial constraints.

② Augment private capital formation by boosting investor confidence

③ Reduce cost of credit through lower

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operational costs and higher economies of scale.

(4) Promote new schemes for financial inclusion ~~Teg~~ NABARD led SHG Bank linkage program

(5) NABFID has aided the growth of the domestic bond market

(6) deepening the capital market through promotion of REITs & InVITs.

(7) NHB has held maintain stability in the real estate market and promote home ownership.

Way forward
- → further capitalisation of NABFID by the govt
- → Adopt 'Temasek model' of singapore
- → use of 'elephant bonds'.

Thus, DFIs are engines of our growth Holy helping India become developed by 2047.

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Q4. भारत को खाद्य प्रसंस्करण के क्षेत्र में अपनी तुलनात्मक बढ़त का लाभ उठाकर इस क्षेत्र को वैश्विक ऊर्जागृह में परिवर्तित करने की आवश्यकता है। विवेचना कीजिए।

India needs to leverage its comparative advantage in food processing to transform the sector into a global powerhouse. Discuss. (Answer in 150 words) 10

As per NABARD data the extent of food processing in India averages around 5-10% with higher rates seen only in milk processing.

India's comparative advantage
- cheap labour
- Agricultural surplus
- Regional processing clusters
- Presence of Industrial capacity
- High capacity for new R&D.

Means of leveraging comparative advantage

1. Promotion of growth and scale of small MSMEs in processing through formalisation. ~~Reg~~ via PMFME scheme
2. Focus on quality and certification to uphold sanitary/phytosanitary standards.

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(3) Reduce logistical costs below 10%. to minimise additional overhead.

(4) More focus on R&D into new and innovative products.

(5) Leverage the growing trend towards healthy foods through millets, ayurvedic goods, etc.

(6) Promotion of Model contract farming Act to strengthen upstream linkages.

(7) Providing credit guarantees to MSMEs in the sector to boost exports ~~Pg~~ as announced in Budget 2024.

(8) Further expand the PLI scheme for food processing.

Thus, India can move towards realising SDG-1, 2, 3, 9 & 10 through a more robust food processing sector.

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Q5. प्लास्टिक जलवायु परिवर्तन में किस प्रकार योगदान देता है? भारत इस दिशा मे कई उपायों को प्रारंभ करने के बावजूद प्लास्टिक प्रदूषण को नियंत्रित करने में सफल क्यों नहीं हुआ है?

How do plastics contribute to climate change? Why has India not been successful at controlling plastic pollution despite initiating several measures? (Answer in 150 words) 10

India is currently the third largest user of single use plastics and this has serious ramifications for both pollution & climate change.

Contribution of plastics to climate change

1. Dumping into landfills causes land degradation → weakens sequestration.
2. Incineration creates GHG emissions
3. Use of crude & oil byproducts for production of plastics.
4. Micro hypoxic degradation produces even more greenhouse gas emissions eg Release of methane.

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Reasons for low success in reducing plastic pollution

1. Proliferation of single use plastics
2. Weak mechanism of ~~exp~~ extended producer Responsibility.
3. High manpower dependence for sorting of plastic waste.
4. Low fiscal capacity of municipal bodies
5. Weak waste segregation.

Way forward
- → Focus on LiFE movement methods
- → Indore model - Municipal green Bonds to aid ULB finance
- → strict enforcement of ban on single use plastics

Thus, the ban on plastics' unabated use is crucial to achieve the SDGs - 11, 12 & 13 for a more sustainable future.

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Q6. भारत में सार्वजनिक स्थलों पर अक्सर होने वाली भगदड़ के कारणों की व्याख्या कीजिए। इस तरह की घटनाओं को कैसे रोका जा सकता है?

Explain the causes of frequent stampedes at public places in India. How can such incidents be prevented? (Answer in 150 words) 10

Recently, an incident of a large stampede was seen at a religious gathering at Hathras, UP.

Causes of stampedes
- Poor evacuation protocols
- Crowd management is weak
- Lack of proper entry & exit points
- Crowd-slowing measures are not adopted.
- Venues exceed their seating capacity

Way forward to prevent stampedes

① Strict action against venues that deliberately exceed capacity.

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② Prior notification to authorities to allow crowd control personnel to be deployed.

③ Clear markings of entry & exit points & clear passage-ways

④ Ambulances should be kept on stand-by.

⑤ Use of triaging methods to prioritise pregnant women, children elderly & disabled.

⑥ Use of railings & U-bends to slow down stampedes.

Thus, proper adherence to basic civic norms and venue management can greatly reduce risk of stampedes.

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Q7. ह्यूमनॉइड रोबोट्स के क्षेत्र में हुई नवीनतम प्रगति क्या है? इन रोबोटों के समाज पर पड़ने वाले प्रभावों से जुड़े मुद्दों पर चर्चा कीजिए।

What are the latest advancements in the field of humanoid robots? Discuss the issues surrounding the impact of these robots on society. (Answer in 150 words) 10

Humanoid robots are robotic machines that seek to replicate human mobility to augment / replace human labour in hazardous or experimental areas.

Latest advancements

1. ISRO has created Vyomamitra & Dhruva robots for its Gaganyan program.
2. Robot Sophia granted citizenship by Saudi Arabia.
3. NASA has been using humanoids in space for almost 2 decades.
4. gradual use of robots in the hospitality industry.
5. used during COVID to maintain safety.

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Issues surrounding humanoids.

1. High cost of development
2. Limited motor abilities compared to the human body.
3. creation of technological inequality in the developing world
4. Requires private sector participation to reduce budget constraints
5. Real and apprehensions about sentient robots

Way forward
- → Uphold Asimov's 3 laws of Robotics
- → creating a National Mission for Robotics.
- → Promote R&D into AI / ML & humanoids.

Thus, there is a need to ensure productive use of humanoids to promote scientific & economic advancement

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Q8. पुनर्संयोजी डीएनए तकनीक ने जेनेटिक इंजीनियरिंग में किस तरह क्रांति ला दी है? इसके प्रभावों को उदाहरण सहित स्पष्ट कीजिए।

How has recombinant DNA technology revolutionized genetic engineering? Provide examples to illustrate its impact. (Answer in 150 words) 10

Recombinant DNA technology uses transgenic genetic material to add certain desirable traits or qualities to an organism.

Role in genetic engineering

① Producing GM crops that are more tolerant to pesticides & have more productivity. Eg GM Mustard.

② GM crops can also promote food security Eg Vitamin rice using bacterial genes.

③ vaccine development Eg covishield

④ Use of phytoplankton genes to produce (glow in the dark) drugs to better track delivery.

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(5) Transgenic cows have been used to make human milk.

(6) Development of oil zapper bacteria using recombinant technology to control oil spills.

(7) Insulin gene added to bacteria for bulk production of insulin.

(8) In Japan, human liver genes have been added to goat embryo to produce human liver.

Some concerns
- → Prohibitive costs
- → Creates haves & have-nots across the world
- → Low study on long term safety.

Thus, recombinant DNA tech should be used in an equitable & inclusive manner to share its benefits with all

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Q9. जम्मू-कश्मीर में गैर-राज्य अभिकर्ताओं द्वारा अपनाई जाने वाली नवीन एवं उभरती रणनीतियों ने इस क्षेत्र में गंभीर सुरक्षा चुनौतियां उत्पन्न कर दी हैं। विवेचना कीजिए।

New and evolving tactics employed by non-state actors in Jammu and Kashmir have created significant security challenges in the region. Discuss. (Answer in 150 words) 10

The year 2024 has seen a sudden spurt in cases of violence and terrorism by non-state actors in J&K.

New tactics
- Lone warriors
- Use of sleeper cells
- Using cryptocurrency for financing
- Damaging critical infra like bridges
- Hawala has gone online using dark web

Challenges for security created

1. Hampering regional integration goal and infra development.
2. Deters private capital formation by

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threatening private investors.

③ challenge to the Home Ministry's goal of gradual demilitarisation of J&K.

④ Radicalisation of youth further affecting bridging the people to people contact gap.

⑤ challenges of human development in the region

Way forward
- → Focussed skill development
- → strengthen operation sadbhavana
- → village defence guards should be expanded
- → operation sarvashakti should be reiterated.

Thus, as PM Vajpayee said, we need to uphold Insaniyat, Jamhooriyat and Kashmiriyat to eliminate terror for good.

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Q10. भारत में उभरती साइबर सुरक्षा चुनौतियों से निपटने के लिए निरंतर नवाचार और दक्षता की आवश्यकता है। इसके मद्देनजर, भारत में साइबरस्पेस की सुरक्षा में CERT-In की भूमिका पर प्रकाश डालिए।

The evolving cybersecurity challenges in India demand constant innovation and agility. In light of this, give out the role of CERT-In in safeguarding cyberspace in India. (Answer in 150 words) 10

As per surfshark India is the third most cyber-attacked nation in the world.

Evolving cybersecurity challenges

① aid from state actors for attacks
Eg 2020 Maharashtra cyber attacks traced to china.

② Use of VPN & Dark web to conceal origin.

③ Dependence on china-made hardware

④ Poor certification standards of government websites Eg Aadhar leak of 80 Cr Indians in 2023.

⑤ Growing interdependence of the entire digital framework via Indiastack.

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⑥ Low penetration of cyber-insurance in India.

Role of CERT-IN

↳ created under section 70B of IT Act, 2000

① First responder for ~~cyb~~ cyber attacks

② Coordination together with other agencies to reduce vulnerabilities.

③ Tracing & intercepting cyber threats

~~Eg~~ G20 website attacked 16 lakh times per minute by DDOS attacks last year

④ Laying out guidelines for government departments to follow.

⑤ Conducting cyber-preparedness exercises

Thus, CERT-IN is a crucial pillar of cyber-suraksit Bharat.

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Q11. भारत में जल-गहन फसल पद्धति की ओर असमान झुकाव क्यों रहा है? संधारणीय जल-उपयोग फसल पद्धति सुनिश्चित करने के लिए लागू किए जा सकने वाले उपायों पर चर्चा कीजिए।

Why has there been an uneven tilt towards water-intensive cropping pattern in India? Discuss the measures that can be implemented to ensure a sustainable water-use cropping pattern. (Answer in 250 words) 15

Starting with the green Revolution, India's water use intensity has increased due to a series of government policies and restrictive factors.

Reasons for high water-intensive cropping

1. Presence of rice/wheat bias in our farming system
2. Unintended consequence of government schemes. PM-KUSUM causing depletion of groundwater due to free solar energy.
3. Low use of climate friendly practices like system of Rice Intensification
4. Low water use efficiency due to lack of micro irrigation.

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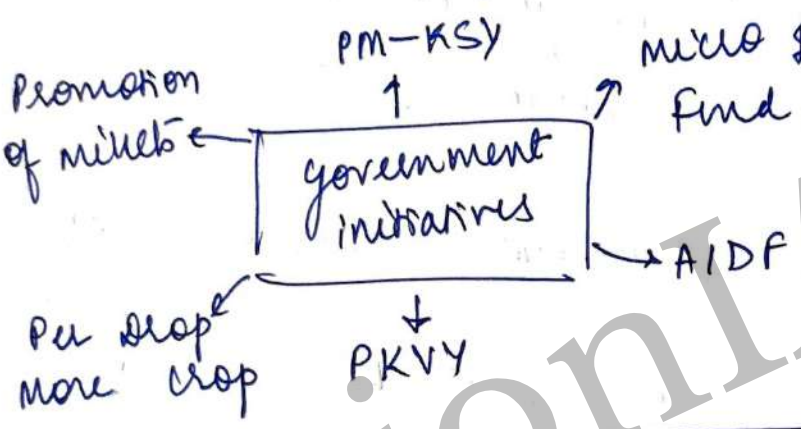
(5) evaporation loss up to 40% in water canal systems.

(6) Lack of proper planning of water resource at the state levels.



Way forward for sustainable water use

(1) Promotion of climate smart agriculture based on resource efficient methods.

(2) Adopt Niti Aayog committee recommendation of shift from land productivity to water productivity agriculture

(3) Promotion of water user Associations.
Eg Odisha Pani Panchayats

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(4) Rationalise harmful electricity subsidies
Eg Gujarat's Jyotigram Yojana.

(5) Promote local stewardship of water resources Eg Telangana Mission Kakatiya

(6) Boosting micro-irrigation coverage through incentives.

(7) Promotion of millets by leveraging local captive demand

(8) Use of HYVs in farming based on better water use productivity.
Eg PM Modi launched 109 HYVs in August 2024.

(9) Merge CWC + CGWA to create a National Water Resource Authority

Thus, sustainable agriculture depends on our ability to ensure Niromal & Aviral Jal to every single farmer.

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Q12. विकास एजेंडे में जलवायु परिवर्तन संबंधी चिंताओं को प्रमुखता से शामिल करने के लिए बजट प्रक्रिया के साथ जलवायु वित्त को समेकित करने की आवश्यकता है। इस संदर्भ में, भारत में जलवायु बजट की आवश्यकता पर चर्चा कीजिए।

Mainstreaming climate change concerns within the development agenda requires integration of climate finance into the budgeting process. In this light, discuss the need for climate budgeting in India. (Answer in 250 words) 15

According to the economic survey 2021, India alone needs USD 1.4 Trillion in climate finance to meet our goal of Net Zero by 2047.

Need for climate budgeting in India

(1) crucial for a 'just, orderly & equitable' energy transition as argued by Abu Dhabi Declaration.

(2) Reduce ICOR of green energy methods like solar or wind energy.

(3) Promote R&D through stable financial flows. Eg SHIP project for green H_2.

(4) ensuring adequate adaptation to

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protect vulnerable groups from imminent climate threats.

(5) Incentivising households to transition to green energy. Eg Surya Ghar Yojana

(6) green finance is required to move away & phase down unabated coal as prioritised by UNFCCC-COP.

(7) Building resilience of infrastructure against climate change.

(8) Incentivise adoption of more sustainable construction Eg Indian Green Building Code

Way forward to ensure climate budgeting

(1) Adopt Pigovian taxes to reduce negative externalities. Eg coal cess.

(2) Adoption of SEBI ~~BS~~ BRSR standards by all listed companies.

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③ More transparency in green initiatives to reduce greenwashing.

④ Adopt Partha Dasgupta (UK) committee recommendations on green finance accounting.

⑤ Deepening the green bond market through sovereign green bonds.

⑥ Adoption of carbon credit trading scheme to plug CO_2 leakages.

⑦ Incorporate social cost of CO_2 emissions into budget planning.
~~Eg~~ For India it is USD 86 / ton CO_2

As economic survey showed, India already has 5.6% of GDP as adaptation relevant finance, showing the growing penetration of climate budgeting.

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Q13. भारत में कृषि उपज के भंडारण और विपणन में प्राथमिक कृषि ऋण समितियां (PACS) क्या भूमिका निभाती हैं? हाल ही में प्रारंभ की गई 'सहकारी क्षेत्र में विश्व की सबसे बड़ी अनाज भंडारण योजना' के महत्व पर टिप्पणी कीजिए।

What role do Primary Agricultural Credit Societies (PACS) play in the storage and marketing of agricultural produce in India? Comment on the significance of the recently launched 'World's Largest Grain Storage Plan in Cooperative Sector'. (Answer in 250 words) 15

PACS are the ground-level bodies in India's rural cooperative credit structure and even today, 40% of KCC loans are processed through PACS.

Role in storage & marketing of agri produce

① Reduce post-harvest losses by assisting farmers with credit for transport

② construction of godowns for safe storage of grains.

③ Promote collective marketing of goods to uphold bargaing power of farmers.

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(4) Market linkages with food processing industries. Eg 'Maha-grapes' model

(5) Help small farmers afford transport to reach the APMC to sell their produce.

Significance of worlds largest grain storage plan in coop. sector scheme

The scheme was announced in 2023 to be implemented by the FCI together with National cooperatives development corporation

(1) Will promote decentralised storage to reduce losses to farmers.

(2) Strengthen the e-Negotiable warehouse receipt system to enable credit access to farmers.

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(3) Promote scientific and hygienic storage

(4) strengthen the PDS framework by reducing loss from rotting grains.

(5) Promote food security and better implementation of NFSA 2013.

(6) Reduction of logistical costs for the FCI for procurement & storage.

(7) Help rationalise the subsidy burden towards ~~PMGKAY~~ PM-GKAY scheme by ~~to~~ rationalising operational costs.

Thus, the PACs can play a crucial role in promoting food security, income realisation and agricultural growth through this scheme.

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Q14. भारत में मौजूदा विमान पत्तनों का विस्तार और नए विमान पत्तनों का विकास केवल यात्रा संपर्क में सुधार तक सीमित नहीं है बल्कि यह कहीं अधिक लाभ प्रदान कर सकता है। चर्चा कीजिए।

The expansion of existing airports and the development of new airports in India can provide benefits beyond merely improving travel connectivity. Discuss. (Answer in 250 words) 15

India is set to become the largest aviation market globally by 2030, and this has ramifications even beyond connectivity.

Benefits of airport expansion beyond connectivity

① creation of employment for lakhs of persons.

② Promoting high value agri exports through KRISHI-UDAN

③ Help crowding-in of investment in Tier 2 & 3 cities

④ Promote regional and global linkages for trade & tourism.

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(5) Can help reduce regional divide in infrastructural growth eg UDAN scheme

(6) Help deepen the penetration of the aviation sector beyond the major urban sectors.

(7) Also serves a strategic purpose by developing landing strips for the air force in emergency cases.

Way forward to promote airports development

(1) More efficient risk allocation in PPP models to promote confidence

(2) Providing viability gap funding to even more airports

(3) Boosting creation of land banks to reduce land acquisition hurdles.

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(4) use 'elephant bonds' to enable access to long term concessional credit.

(5) engaging with multilateral banks to source more credit.

(6) improving the quality of auxiliary infrastructure like roads & drainage.

(7) reviving old ~~dt~~ defunct airports
Eg khajuraho airport of MP

Thus, the growth of airports can have a multiplier effect for the economy well beyond connectivity, as an engine of infrastructure growth

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Q15. भारत अपने ऊर्जा क्षेत्रक में महत्वपूर्ण परिवर्तन लाने के अंतिम पड़ाव पर है और देश की ऊर्जा क्षमता में पर्याप्त वृद्धि करने के लिए तैयार है। इस परिवर्तन को संधारणीय और समावेशी बनाने के लिए क्या आवश्यक है?

India is on the cusp of a significant transformation in its energy sector and is set to substantially augment the country's energy capacity. What makes this transformation sustainable and inclusive? (Answer in 250 words) 15

India is on track to achieve its goal of 500 GW of non-fossil fuel energy by 2030 and diversification of our energy mix.

Elements of India's sustainable and inclusive transformation

① Promotion of a varied mix of energy sources from wind to solar to nuclear.

② R&D into new technologies for clean energy - eg green hydrogen mission

③ global collaboration for green energy. eg collaboration with France for Small Modular Reactors.

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(4) Use of decentralised clean energy
Eg surya ghar Yojana.

(5) Decarbonisation of industrial sector
Eg carbon credit Trading scheme
under ECA, 2001.

(6) Promotion of coal gassification by
energy companies.

(7) Production of bio-energy through
GOBARDhan and SATAT schemes.

Way forward to promote further sustainability

(1) Moving towards phasing down coal
towards our net zero goal (2070).

(2) Promoting private sector participation
in green energy.

(3) green credits should be used to

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promote energy conserving practices.

④ Arguing for technology transfer at global fora like COPs of UNFCCC

⑤ Bolstering the Renewable Purchase obligation targets for industries.

⑥ strengthen PLI scheme for photovoltaics to promote decentralisation of solar energy.

⑦ Viability gap funding to combined solar & wind farms.

Thus, India is moving towards a cleaner and greener future marked by progress in SDG-11, 12 & 13 as part of one vision of sustainable & inclusive transition.

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Q16. जलवायु परिवर्तन पर संयुक्त राष्ट्र अंतर-सरकारी पैनल (IPCC) ने अपनी हालिया रिपोर्ट में इस बात पर बल दिया है कि नेट नेगेटिव CO2 एमिशन के लक्ष्य की प्राप्ति के लिए कार्बन डाइऑक्साइड रिमूवल (CDR) आवश्यक है। CDR क्या है? CDR प्राप्त करने के विभिन्न तरीकों का वर्णन कीजिए और इससे संबंधित चुनौतियों की विवेचना कीजिए।

The UN Intergovernmental Panel on Climate Change (IPCC) in its recent report emphasizes that carbon dioxide removal (CDR) will be necessary to achieve net negative CO2 emissions. What is CDR? Describe the different methods to attain CDR and discuss the associated challenges. (Answer in 250 words) 15

CDR refers to a variety of technologies for storage, sequestration and conversion of CO_2 gas ~~into~~ reduce its atmospheric concentration.

[Methods of CDR]

① Sequestration through green cover and forests. India's goal of creating an additional carbon sink.

② Trapping in empty mines and subterranean crevices.

③ Limestone treatment to convert CO_2 into $CaCO_3$ in solid form.

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(4) Promoting phytoplankton activity in oceans to boost photosynthesis.

(5) compaction and solidification of CO_2 into solid black carbon.

Challenges with CDR

(1) Prohibitively high cost of these technologies due to low economies of scale

(2) Low levels of current R&D & dominated by western nations.

(3) Equitable technology transfer by western countries.

(4) IPR and patent protections reducing free usage.

(5) CDR alone not enough – should be combined with emission reductions of 47% by 2030

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Way forward to promote CDR

1. Use Anusandhan NRF (Budget 2024) to promote R&D in the sector.
2. Increase PPP to reduce the current level of diseconomies and promote wider adoption.
3. Global collaboration through a new multilateral grouping like ISA for CDR.
4. Promoting technology transfer from developed nations at COP-29 this year.
5. Simultaneous progress on emission reduction and tripling RE capacity as per COP-28 goal.

Thus, CDR can help reduce global warming by mitigation of CO_2 emissions to complement our Paris Agreement goals.

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Q17. भारत बाढ़ से संबंधित खतरों के प्रति संवेदनशील क्यों है? उपयुक्त उदाहरण प्रस्तुत करते हुए भारत के विभिन्न भागों में बाढ़ से संबंधित आपदाओं के लिए उत्तरदायी कारणों का विश्लेषण कीजिए।

What makes India vulnerable to flood-related hazards? Giving suitable examples, analyse the causes for flood-related disasters in various parts of India. (Answer in 250 words) 15

As per CWC, up to 12% of our land is prone to flooding, mainly in river basins.

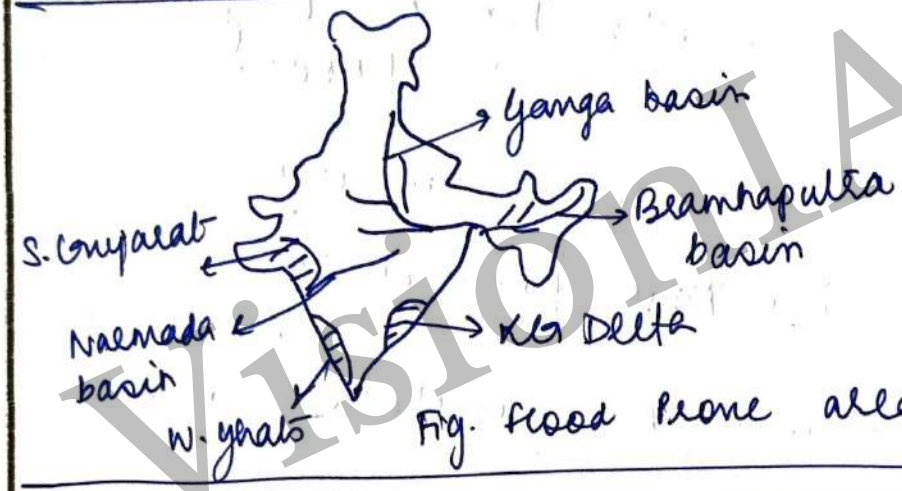

Fig. Flood Prone areas.

Reasons for vulnerability to floods

① accelerated glacial melt due to global warming.

② Erratic rainfalls due to climate change
Eg 2024 Telangana floods.

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(3) siltation of rivers and frequent change of course. Eg 2022 Assam floods

(4) encroachment of natural water bodies & streams Eg Hyderabad floods.

(5) Poor drainage and low focus on rainwater harvesting Eg 2023 Bangalore floods.

(6) Lack of proper early warning systems Eg Ajmer flood of 2023.

(7) Floods induced by cloudbursts and GLOFs. Eg sikkim GLOF of 2024.

(8) sand mining and destruction of natural flood barriers.
Eg Hoshangabad flood of 2022.

(9) Reduced percolation capacity of land due to asphalt roads.

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Way forward to manage floods

① Proper zonation of flood prone areas using ISRO's Bhuvan portal

② Efficient early warning systems
Eg Odisha's RIMES APP

③ Learning from traditional knowledge
Eg Terrace farming in NE region

④ Promoting urban green cover & remove encroachments. Eg HYDRAA model of Hyderabad

⑤ Adopting chinese 'Sponge city' model

⑥ Replicating Agartala's approach for decentralised flood management.

Thus, efficient flood mitigation requires a combination of actions aligned with the 7 Sendai priorities.

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Q18. ISRO का आदित्य-L1 मिशन तथा NASA का पार्कर सोलर प्रोब सूर्य के अपने अध्ययन के संदर्भ मे किस प्रकार भिन्न हैं?

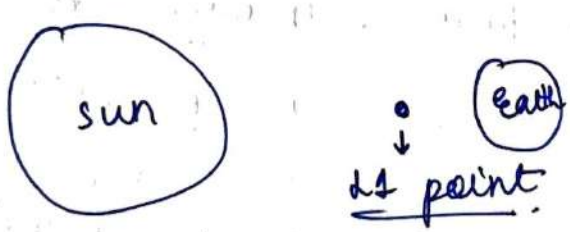
How do ISRO's Aditya-L1 mission and NASA's Parker Solar Probe differ in their study of the sun? (Answer in 250 words) 15

The Parker Probe of NASA is expected to 'touch' the sun sometime around the end of the year whereas Aditya L1 has reached its orbit.

Aditya L1 Mission

① Launched to study solar coronal activity and regular updates on solar flares.

② Positioned at Lagrange Point L1.



③ Maintains a stable orbit around the sun

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(4) will send regular data to ISRO over several years.

(5) studies the sun from a considerable distance

Parker Probe

(1) It is a fly-by mission to fly past the sun.

(2) does not have a stable orbit

(3) will 'touch' the solar corona from a very close distance.

(4) It will gradually move out into outer space losing contact.

(5) No regular updates, but studying the sun up close once.

(6) Focus not on periodic assessment of solar activity & hotspots.

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Differences

Aditya L1	Parker Probe
① Fixed orbit	No fixed orbit
② Long term information on solar activity	Will fly-by once near the sun
③ Distant from the sun	Will achieve close contact
④ Mission life of 4-6 years	Shorter life

Thus, while both Aditya 1 & Parker Probe are crucial for our understanding of solar activity, they adopt different approaches to study the same

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Q19. भारत की अर्थव्यवस्था और राष्ट्रीय सुरक्षा पर धन शोधन (मनी लॉन्ड्रिंग) के हानिकारक प्रभावों को रेखांकित कीजिए। इस समस्या से निपटने में सामना की जाने वाली चुनौतियों पर चर्चा कीजिए।

Bring out the detrimental impact of money laundering on the economy and national security of India. Discuss the challenges faced in countering this menace. (Answer in 250 words) 15

according to the World Bank, the global money laundering network has exceeded USD 1 trillion.

Impact of money laundering

(A) For National security

↳ Black hole effect is promoted

① that funds Narco-terrorism

② strengthens other organised crimes like smuggling, gun running, etc

③ Insurgents often use money laundering for finance. Eg NSCN(K) in Nagaland

(B) For economy

① Legitimate business fail to compete

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② Loss of tax revenue to government

③ Risk of global economic sanctions

④ Deters foreign investors

Eg Venezuela crisis exacerbated by money laundering.

Challenges to addressing money laundering

① Use of complex financial transactions through FPIs, P-Notes and shell companies

② Cryptocurrency has further hampered traceability.

③ Global hawala flows have gone online via ~~the~~ dark web.

④ Role of unfriendly neighbours in promoting such activities.

⑤ Porous borders and commission of

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various organised crimes along them. Eg Myanmar drug trade.

Way forward to curb ML

① Use of Wolfsberg principles of Transparency International to strengthen banking surveillance

② Use of AI/ML to track illicit financial flows online. Eg Singapore FIU model

③ Stronger border security using the CIBMS technology.

④ Collaborate with neighbours to curb organised crimes. Eg operation Sunrise w/ Myanmar

⑤ Strict regulation of cryptocurrency

Thus, the threat of money laundering needs us to keep ~~ope~~ pace with the evolving technological scenario.

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Q20. वैश्विक मंच पर अपनी प्रतिष्ठा को बढ़ाने के लिए रक्षा निर्यात भारत के लिए एक रणनीतिक अनिवार्यता है। विवेचना कीजिए। रक्षा निर्यात को बढ़ावा देने के लिए सरकार द्वारा कौन-से उपाय अपनाए गए हैं।

Defence exports are a strategic imperative for India to enhance its stature on the global stage. Discuss. What are the measures adopted by the government to bolster defence exports? (Answer in 250 words) 15

Per SIPRI data, India is now among the world's top 25 defence exporters as our exports have risen by 3|x over 10 years.

Significance of defence exports

① Boost our global hard power as a major military power.

② Deepen strategic partnerships through defence exports eg Brahmos to Philippines

③ Balance our current account deficit

④ Strengthen local auxiliarisation to crowd-in more investment.

⑤ Boost local capacity to reduce

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dependence on foreign suppliers.
Eg Indigenous AMCA project.

(6) maintain stability in IOR and the larger Indo-pacific.

Government measures

(1) creation of defence Modernisation fund

(2) defence industrial corridor in UP and Tamil Nadu

(3) Positive indigenisation list to promote domestic production

(4) Local sourcing requirement for collaboration projects.

(5) SRJAN portal

(6) aid to defence startups such as in the drone industry.

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Way forward to boost exports

1. focus on fewer projects but with more attention
2. ensure that delays are minimised in production
3. offering local manufacturing to allies to help reduce cost.
4. Reciprocal friendshoring policies to build complimentarities.
5. Boost local R&D expenditure to promote innovation.
6. entering into defence cooperation agreements ~~Treg~~ with Vietnam recently.

Thus, defence exports align with our Vishwamitra aspiration and desire of realising SAGAR goal as well.

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GENERAL STUDIES (TEST CODE : 2903)

Name of Candidate	KSHITIJ ADITYA SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	45933652
Center	ONLINE	Date	29-07-2024

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
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6	10	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	**Strongly Recommended**

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EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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All the Best

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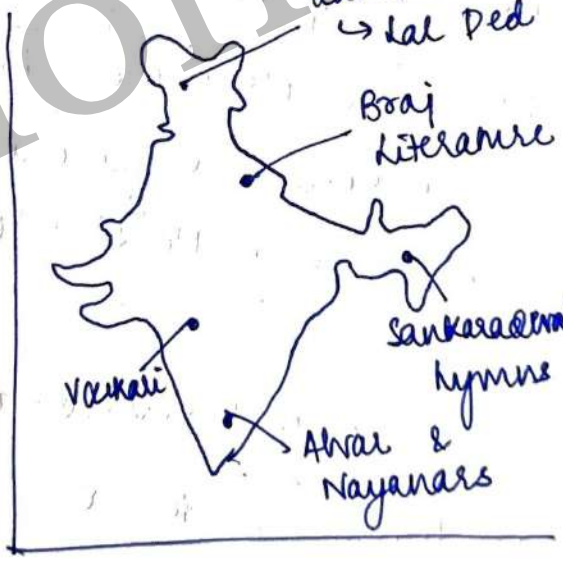
1. भारतीय स्थानीय साहित्य क्षेत्रीय पहचान, आकांक्षाओं और इतिहास का प्रतिबिंब है। उपयुक्त उदाहरणों के साथ विस्तारपूर्वक वर्णन कीजिए। (150 शब्दों में उत्तर दीजिए)

Indian vernacular literature is a reflection of regional identities, aspirations, and histories. Elaborate with suitable examples. (Answer in 150 words) 10

Vernacular literature of India represents a rich mosaic of traditions and values and has waved over many centuries right from the Bhakti movement.

Significance of vernacular literature

① Reflection of local religious beliefs and traditions.
Eg Vithoba worship through abhangs.



② values of Kashmiri identity comes out through the works of Habba Khatoon & Lal Ded

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(3) History of Vaishnavism in Assam can be seen through Bhorgeets sung in the Satras of Assam.

(4) Aspiration for oneness and equality as seen in the Vachan literature of the Lingayats of Karnataka.

(5) Shows the development of the language itself. Eg Ramcharitmanas and Braj literature.

(6) Rejection of orthodox beliefs as seen through vernacular Bhakti literature. Eg Narsi Mehta - Gujarati

Thus, regional & vernacular literature is a testament to India's diversity and our inclusive traditions that shape our culture even today.

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2. ब्रिटिश औपनिवेशिक शासन के अधीन आधुनिक भारतीय कला के विकास को आकार देने वाले प्रमुख कारकों का विवरण दीजिए। (150 शब्दों में उत्तर दीजिए)

Give an account of the key factors that shaped the development of modern Indian art under the British colonial rule. (Answer in 150 words) 10

The arrival of the europeans to India was a turning point in the development of modern Indian art through new methods and influences.

Key factors shaping the development of Indian art

(1) Influence of european realism on Indian artists. Eg Raja Ravi Varma

(2) Rediscovery of our own ancient past and cultural accomplishments. Eg Ajanta art influenced Abanindranath Tagore

(3) Rise of the Indian renaissance movement created an impetus.

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(4) change in the nature of patrons of art from the rulers to the British officials.

(5) Swadeshi movement also invigorated the development of new forms of art.

(6) use of new painting methods like water colour led to new forms of expression.

(7) Nationalist schools of art like the Bengal school emerged.

(8) development of new centres of art at Kolkata, Mumbai, etc.

Thus, development of Indian modern art was a response to social events and the structural changes during the colonial era.

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3. भारतीय कृषि का व्यावसायीकरण करने की ब्रिटिश ईस्ट इंडिया कंपनी की महत्वाकांक्षा ने ग्रामीण अर्थव्यवस्था को कैसे प्रभावित किया? (उत्तर 150 शब्दों में दीजिए)

How did the motivation of the British East India Company to commercialize Indian agriculture affect the rural economy? (Answer in 150 words) 10

The attempts ~~made~~ at commercialisation and productivity maximisation for economic reasons changed the shape of our agriculturally-dominated rural economy.

Impacts on the rural economy

① The Zameedari system of Hastings led to increased poverty due to the unreasonable demands.

② Cornwallis' Permanent settlement:
↳ led to land deprivation in various areas
↳ sub-infeudation increased
↳ Absentee landlordism
↳ Low/no investment in land improvement

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(3) Rural self-sufficiency was destroyed by these new land policies.

(4) Increased stress on rural lands as industries were destroyed.

(5) Ryotwari and Mahalwari areas:
↳ frequent famines and droughts
↳ Torture of farmers for rent
↳ Land alienation in rural areas.

(6) Rise of moneylenders as an exploitative class.

(7) During the freedom movement several new organisations like Swadesh Kisan Sabha & All India Kisan Sabha came up.

Thus, the colonial policies had a deleterious impact on the rural economy by breaking its agricultural backbone.

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4. भारत का विभाजन उन समुदायों का हिंसक अलगाव था जो अब तक एक साथ रहते थे। इस कथन के आलोक में, विभाजन की प्रक्रिया में शरणार्थियों द्वारा सामना की गई कठिनाइयों पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

The partition of India was a violent separation of communities who had hitherto lived together. In light of the statement, discuss the difficulties faced by refugees in the process of partition. (Answer in 150 words) 10

The Radcliffe Plan unveiled on 17 Aug 1947 opened a new Pandora's box for two newly Independent nations & led to the largest mass migration in human history.

Issues with the partition plan

① Hastily drawn plan.

② Irrational boundaries drawn purely on religious lines.

③ Radcliffe had no experience as he had never visited India

④ No consultation with locals to hear their preferences.

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Difficulties created for refugees

1. Pauperisation due to loss of property
2. Murder, loot & sexual violence faced by them.
3. Breaking up of families and local communities.
4. Resettlement took time due to large number of claims.
5. Less alienated land in India compared to what was left behind.
6. Ghettoisation in small areas of some cities.

Thus, partition was the biggest casualty of the freedom movement and its adverse effects are felt even today by the refugee families.

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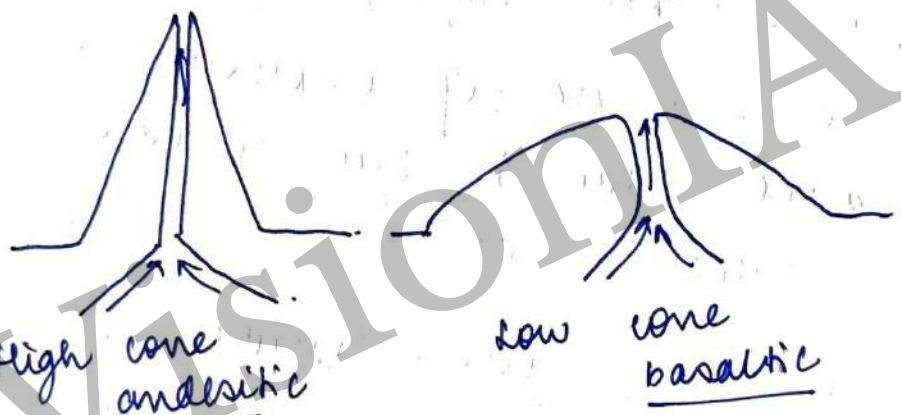
5. मैग्मा का प्रकार न केवल ज्वालामुखी के आकार को बल्कि उसकी विस्फोटक प्रकृति को भी निर्धारित करता है। उदाहरण सहित विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

The type of magma not only decides the shape of a volcano but also its explosive nature. Discuss with examples. (Answer in 150 words) 10

The pH value and constituent material of magma can have a large impact not only on the shape but also the character of the volcano.



Type of magma & associated features

① High silica based magma tends to be less fluid and create high cones.

② Basaltic magma has ~~to~~ high pH and tends to be more runny.

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(इस भाग में कुछ ना लिखें)

(3) Calderas may be formed by andesitic volcanic lava due to explosive nature of discharges.

(4) Flood basaltic provinces occur due to highly fluid magma
Eg Deccan traps.

(5) Mount Stromboli, Topkapi etc. are classic examples of explosive volcanoes. due to their acidic and thicker lavas.

(6) In the pacific ocean, various mid water volcanoes cause huge tsunamis due to their explosive discharge.

Thus, the nature of magma has a direct impact on the explosive nature of volcanoes and present various challenges for local inhabitants.

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6. समुद्र के बढ़ते जल स्तर और पर्यावरणीय चुनौतियों को देखते हुए, तटीय शहरीकरण की रणनीति के रूप में व्यवस्थित रूप से पीछे हटने की प्रभावशीलता का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

Examine the effectiveness of managed retreat as a strategy for coastal urbanization in the face of sea-level rise and environmental challenges. (Answer in 150 words) 10

Managed retreat refers to the deliberate displacement of human settlements away from high risk zones to prevent risks associated with environmental hazards.

Importance of managed retreat

① Rising sea ~~levels~~ levels threaten coastal urban settlements. ~~Eg~~ In Mumbai

② Ingress of water into groundwater from the seas causing salinisation.

③ Reducing agricultural productivity due to soil salinisation.

④ Reducing ecological buffers like corals and mangroves.

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Challenges in coastal areas

① High pressure on land make retreat challenging.

② Encroachment on forests and green spaces may worsen.

③ A very gradual process and cannot be rushed.

④ Financial and Infrastructural constraints

⑤ Only an ~~adq~~ adaptive measure - mitigation is equally important.

Thus. managed retreat may prevent loss of lives and livelihoods. and allow coastal ecology to be restored, yet we need to be mindful of its own constraints.

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7. भारत में भूतापीय ऊर्जा के लिए संभावित स्थलों का उल्लेख कीजिए। भारत अभी भी भू-तापीय ऊर्जा का उपयोग करने के शुरुआती चरण में क्यों है? (उत्तर 150 शब्दों में दें)

State the potential sites for geothermal energy in India. Why is India still at a nascent stage of utilization of geothermal energy? (Answer in 150 words) 10

geothermal energy is a sustainable way of tapping subterranean heat, yet continues to be underdeveloped in India.

Potential hotspots

① J&K and Himachal have several sites where geothermal energy from hot springs can be leveraged.

② The Son - Narmada - Tapi belt is another important region

③ Parts of Rajasthan also have potential for geothermal energy.

④ some volcanic origin islands of A&N islands also have geothermal potential.

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challenges to utilisation
- → Lack of technology.
- → Low economics of scale
- → Lack of adequate research into sites
- → Low political will & private sector participation

Way forward

① incentivising research by private players

② exploring collaborations with countries like Japan & USA.

③ Local industry can be promoted to use geothermal energy.

Thus, despite its limited potential, geothermal energy can enhance energy security especially in remote areas of J&K and Himachal.

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8. भारत जैसे विकासशील देश के लिए संसाधन दक्षता एवं चक्रीयता क्यों महत्वपूर्ण है? (उत्तर 150 शब्दों में दें)

Why is resource efficiency and circularity significant for a developing country like India? (Answer in 150 words) 10

For a developing nation with a large population and limited land resources, resource use efficiency & circularity are not just desirable, but necessary.

Reasons for use efficiency and circularity being a necessity.

① India has 17% of the world's people but only 2.5% of its land & 4% of its water.

② Stress on our ecological resources and forests is very high.

③ Important to reduce wastages and leakage of crucial resources.

④ To prevent environmental degradation ~~Reg~~ through excess urea application

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(5) To ensure equitable access to resources to marginalised groups.

Government initiatives
- → LiFE Movement
- → Right to repair portal
- → Nano urea & DAP
- → PM-KSY - More crop per drop.
- → Extended producer responsibility

Way forward

(1) Promoting transition to clean fuels and renewables.

(2) Reducing domestic wastage

(3) Incentivising adoption of modern tech by companies.

(4) Education and awareness of farmers through Krishi Vigyan Kendras.

Thus the goal of SDG-12 (sustainable production and consumption) requires enhanced circularity & efficiency.

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9. भारतीय परिवार व्यवस्था में श्रम विभाजन के पैटर्न के अंतर्गत आए बदलावों पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Discuss the changes in the pattern of division of labour in the Indian family system. (Answer in 150 words) 10

Since the LPG reforms, the structure of the family and the inter-se division of labour have seen major changes.

Evolving pattern of division of labour

① greater female economic participation through more education and gender parity.

② fairer division of household work between couples.

③ delegation of parenting function to nannies in dual earner families.

④ Value transmission function of joint families is weakening.

⑤ Domestic child labour, particularly of girl child, is reducing.

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Reasons
- More economic opportunities
- More education
- Globalisation & westernisation
- Government efforts and incentives
- urbanisation.

However some negative consequences are also seen:

- Dual burden on women.
- Feminisation of poverty
- Exploitation of female labour
- Sexual crimes & harassment

Thus, the division of labour has followed the Feminisation-U theory of Claudia Golding as female LFPR seems to be rebounding.

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10. भारतीय समाज में पंथनिरपेक्षीकरण से उत्पन्न होने वाले सामाजिक परिवर्तनों पर प्रकाश डालिए। (उत्तर 150 शब्दों में दीजिए)

Throw light on the social changes arising out of secularization in the Indian society. (Answer in 150 words) 10

secularization refers to the process of reducing salience of traditional religions and caste identities in favour of a more modern and egalitarian social outlook.

Reasons for secularisation

① constitutional emphasis → Articles 14, 15, 16, 25-28, 29 & 30.

② Modern education focussing on social equality.

③ government efforts to reduce social barriers.

④ Progressive ideals of the freedom struggle

⑤ Globalisation and western values.

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Changes brought by secularisation

1. Reduced religious and caste conflict
2. Social stability and harmony allowing economic stability.
3. Reduced politicisation of identity and social divides.
4. Equitable access to resources to all without discrimination.

Some negatives
- → Aping of western values
- → erosion of traditional values
- → Local traditions are fading.

Thus, secularisation should not come at the cost of our rich diversity, and progressive ideals should be used to boost our own cultural credentials nationally and internationally.

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11. भारत में कांस्य ढलाई के विकास का विवरण प्रस्तुत करते हुए, परीक्षण कीजिए कि चोल काल की कांस्य मूर्तियों को सबसे परिष्कृत क्यों माना जाता है। (250 शब्दों में उत्तर दीजिए)

Tracing the development of bronze casting in India, examine why the Chola bronze sculptures are considered as the most refined. (Answer in 250 words) 15

Bronze casting based on the cire-perdue technique goes back several millennia in India and can be found even today in styles such as Bidri art.

Development of Bronze casting

① The Harappans were the first to use this method.
Eg Dancing girl of Mohenjodaro.

② The Kushan era chausa bronzes of Jain ~~the~~ Tirthankars show the continuation of this art.

③ The Pophnar bronzes of the Vakatakas shows Mahayana idols made using this technique during the 5th century.

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(4) The Pala Bronzes also used this method.

(5) Finally, during the chola era, this art reached its zenith in the 10th – 11th century.

Refined qualities of chola bronzes

(1) Quality and precision of the chola bronzes was unparalleled.

(2) Level of detailing as seen from the Nataraj statue ~~over~~ achieved new heights.

(3) Number of bronzes produced was also more than any other period.

(4) Philosophical themes explored like the Panigraharam or Somaskanda show artistic development.

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(5) Even today, they command a very high price at artistic auctions.

(6) They were used for religious processions being small in size.

(7) Produced a dazzling monochromatic effect when under direct light.

Thus, the Chola bronzes were the high watermark in the development of Bronze art, a tradition that continues to flourish even today across the country.

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12. भारतीय स्वतंत्रता संघर्ष के दौरान महात्मा गांधी और रवींद्रनाथ टैगोर के बीच असहमति के स्वरूप, जिसने भारतीय लोकतंत्र के मूल सिद्धांतों को आकार दिया, पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)

Comment on the nature of disagreements between Mahatma Gandhi and Rabindranath Tagore during the course of the Indian freedom struggle, which shaped the core principles of Indian democracy. (Answer in 250 words) 15

While Gandhiji and Tagore had great respect for each other (Tagore gave Gandhi the title of Mahatma), they also had various principled disagreements over the course of the freedom movement.

Differences of approach between Tagore and Gandhiji

	Tagore	Gandhi
(1)	He was a universalist who rejected national boundaries	His nationalism was based on gram swarajya
(2)	A ~~modernist~~ modernist who saw merit in use of machinery.	He was wary of the role of new labour displacing technology.

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(3)	Pushed for a modern education based on global influences.	His Nai Talim focussed on core Indian values.
(4)	He opposed the very idea of nationalism as parochial	Based his entire movement on nationalism
(5)	Did not place a heavy emphasis on Swadeshi goods and products	Swadeshi was essential to his strategy.

Some similarities
- → Rejected colonial conquest of the native mind.
- → Non-violence as the ideal means
- ↳ Developing national character
- ↳ Class and caste equality
- ↳ Female education

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[Influence on Indian democracy]

① Shaped our quest for self-sufficiency through 5 year plans.

② Nehru's foreign policy was internationalist and sought global collaboration through NAM.

③ Our education system balances modern education and traditional values.

④ Article 46 (educational & economic interests of backward classes) draws inspiration from them.

⑤ Tribal panchsheel follows this vision of individual genius and cultural emphases.

Thus Tagore and Gandhiji have shaped our identity as a nation and our moral place in today's global politics.

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13. प्रथम विश्व युद्ध अफ्रीकी इतिहास में एक महत्वपूर्ण बिंदु को इंगित करता है जिसके परिणाम उपनिवेशों के लिए गंभीर सिद्ध हुए। विवेचना कीजिए। (250 शब्दों में उत्तर दीजिए)

The First World War represents a turning point in African history with profound consequences for its colonized nations. Discuss. (Answer in 250 words) 15

The First World War was not only a natural consequence of the scramble for Africa but also a turning point in its history.

Impact on African colonies

① Further alienation of the colonizer & the colonized due to rampant economic exploitation

② Emergence of a national consciousness in the colonies.

③ Further exposed the European colonial project when German colonies were taken away & redistributed.

④ Deepened colonialism in several parts of Africa, such as in Egypt.

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(5) exposed African soldiers to other nations & national movements for independence.

(6) gradual rise of communist influence in Africa after the formation of the soviet union.

(7) Further economic deterioration of colonies created greater resentment against the colonisers.

Consequences
- → Violent uprisings
- → Rise of nationalism
- → Pan-Africanism emerged
- → greater global collaboration ~~Eg~~ with INC.

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Thus, the First World War set into motion the process of gradual liberation of Africa from colonial rule.

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14. भारत में चीनी उद्योग से जुड़ी समस्याएं क्या हैं? क्या इथेनॉल की बढ़ती मांग इसके स्थायित्व (Sustenance) को सुनिश्चित करने में मदद कर सकती है? (उत्तर 250 शब्दों में दें)

What are the problems associated with the sugar industry in India? Can the rising demand of ethanol help in ensuring its sustenance? (Answer in 250 words) 15

India has now become the world's largest producer of sugar. Yet our sugar industry is beset with challenges.

Problems of the sugar industry

1. Rate of growth of FRP on sugarcane has reduced in recent years.
2. Massive water consumption of the crop leading to water stress.
3. Losses post harvest due to the weight-losing nature of the crop.
4. High production costs associated with the crop.
5. Low yields have been stagnant for decades.

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(6) Vulnerability due to long harvest period.

Role of ethanol industry in ensuring sustainability

Positives
- greater demand for sugarcane
- Use of residue
- greater remuneration
- Crop security through partnerships.
- Reduction of post-harvest losses.

Constraints
- current growth rate of production is limited.
- food security may be harmed
- Productivity of the crop needs to be increased.

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Other measures to boost sustainability

1. Development of HYVs of sugarcane
2. Reducing dependence on monsoon and expansion of irrigation.
3. Promotion of FPOs and cooperatives to ensure greater bargaining power.
4. enhancing local procurement requirement for industries to prevent weight losses.
5. Increasing FRP on sugarcane to incentivise farmers further.

Thus, demand for ethanol can be a gamechanger for the sugar industry but additional measures are also required.

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15. आर्कटिक क्षेत्र में पिघलती हिम परतों (Ice-Caps) के वैश्विक जलवायु, समुद्री पारिस्थितिक तंत्र और वैश्विक अर्थव्यवस्था पर पड़ने वाले प्रभाव की विवेचना कीजिए। (उत्तर 250 शब्दों में दीजिए)

Discuss the impact of receding ice-caps in the Arctic region on the global climate, marine ecosystem, and the global economy. (Answer in 250 words) 15

According to the IPCC Synthesis Report, arctic ice caps are melting much faster than the rest of the world and pose a great threat to global climate, ecology & economy.

Impact of receding ice caps

(I) on global climate

↳ Release of trapped methane hydrates will enhance global warming.

↳ Increasing sea water levels will increase risk of tsunamis and coastal submergence

↳ Disturbance of the Atlantic Meridional overturning circulation (AMOC).

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(2) On marine ecosystems:

↳ Release of primordial microbes can increase spread of diseases.

↳ Destruction and fragmentation of the arctic ecology.

↳ Rising ocean temperatures in the long term will threaten marine life.

(3) On global economy.

↳ Loss of lives & livelihoods due to greater disaster vulnerability

↳ Shipping routes may open up in the Arctic.

↳ Increased expenditure on adaptation to climate threats.

↳ Disproportionate impact on the vulnerable communities.

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[Way forward]

1. Redoubling our commitment to the Paris Agreement goal to limit global warming to 1.5°C.
2. Reducing use of fossil fuels and switching to greener alternatives.
3. Urgent phase out of HFCs and CFCs as per the Kigali Amendment
4. Reducing methane emissions from agriculture & industrial sectors
5. Helping small island states to adapt through CDRI - IRIS.

Thus, Arctic glaciers represent a global tipping point and urgent focus on SDG-13 (Climate Action) is required to mitigate and adapt to their recession.

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16. भारत में आई.टी. उद्योग, जो पहले कुछ प्रमुख शहरों में ही केंद्रित था, का अब टियर-2 और टियर-3 शहरों की ओर उल्लेखनीय विकेंद्रीकरण हो रहा है। कारण बताइए। (उत्तर 250 शब्दों में दें)

The IT industry in India, once centered in a few major cities, is now witnessing significant decentralization towards Tier-2 and Tier-3 cities. Provide reasons. (Answer in 250 words) 15

IT Industry has emerged as a major engine of growth not only for major urban centres but across the nation, making up for 5.2% of global service exports.

Reasons for decentralisation

① government push through the Software Tech Parks of India (STPI) scheme.

② Improvement of infrastructure in tier-2 & 3 cities.

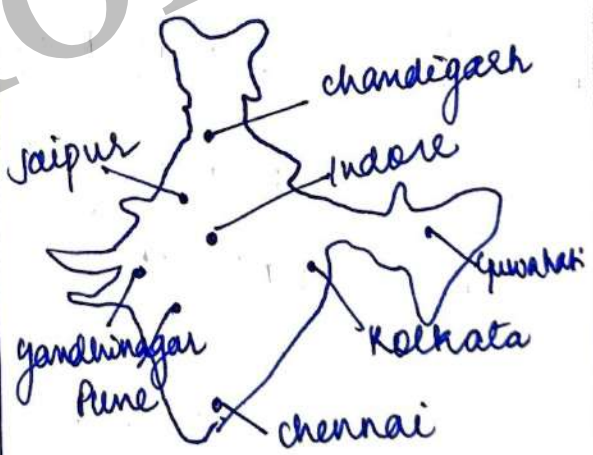

Fig. Location of some STPI Parks

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(3) cost-advantage in smaller cities over larger ones.

(4) availability of skilled labour is rapidly evolving.

(5) Local synergy with growing Industrial sector and SEZs.

(6) state government incentives, tax rebates and other concessions.

Some government schemes
- → SEIS scheme to boost exports
- → Smart Cities Mission to enhance infra
- ↳ STPI Parks scheme
- ↳ PLI scheme for IT Hardware.

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Way forward

1. Promoting the growth of auxiliary services in tier 2 & 3 cities.
2. further emphasis on aspirant states where growth rate of IT sector is low.
3. continued push on infrastructure.
4. setting up more quality educational institutions and research facilities.
5. Promoting industry-academia linkage to enhance convergence

Thus, our IT sector is becoming increasingly pervasive across the country, and becoming a backbone of modern agriculture and industrial growth as well.

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17. भूमध्यरेखीय क्षेत्र में पाई जाने वाली जलवायुविक और वानस्पतिक विशेषताओं को वर्णित कीजिए। ये इस क्षेत्र में स्थित देशों के समग्र विकास को कैसे प्रभावित करती हैं? (उत्तर 250 शब्दों में दीजिए)

Outline the characteristics of the climate and vegetation in the equatorial region. How do they affect the overall development of countries lying in this region? (Answer in 250 words) 15

Due to unique climatological factors, the equatorial belt is one of the most productive ecological & agricultural zones of the world.

Unique characteristics of equatorial belt

1. Heavy rainfall across the year
2. Low variations of temperature across the year
3. Rich vegetation of evergreen forests

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due to high productivity.

④ Very high insolation throughout the year.

⑤ several biodiversity hotspots exist here due to unique ecology and rich species diversity.

Impact on overall development

① Large scope of plantation agriculture eg sugar in cuba, Palm oil in Indonesia

② Production of forest goods such as tropical hardwood, medicinal herbs and rubber.

③ Vast tourism potential due to unique ecology.

④ Large carbon sinks and provision of ecological services.

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Some negative impacts
- → Tribal displacement
- → Land degradation
- → Tropical diseases
- → Poor transport systems
- → Risk from invasive species

Way forward

1. Promoting sustainable plantations.
2. Focussing on silviculture for timber needs.
3. Making tribals partners of growth in sale of forest produce
4. Promoting services growth to reduce stress on land.
5. Tourism sector should also be made more sustainable.

Thus, tropical belt around the equator require ecologically conscious development to preserve their natural wealth and associated cultural traditions.

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18. भारत में विद्यमान सामाजिक अपवर्जन पर वैश्वीकरण के प्रभाव की विवेचना कीजिए। इसके परिणामस्वरूप अपवर्जन के नए रूप कैसे सामने आते हैं? (उत्तर 250 शब्दों में दीजिए)

Discuss the impact of globalization on existing social exclusions in India. How does it result in new forms of exclusion? (Answer in 250 words) 15

globalisation refers to the process of increased global connectivity, convergence and cooperation across the social-economic and cultural planes. It has both created and erased social distinctions across the world

Impact on existing exclusions in India

① Constructive role

(a) greater female empowerment and female LFPR (37% in 2023 - PLFS data)

(b) Reduced caste and class barriers in urban areas through mutual interaction.

(c) Modern education has challenged parochial outlooks.

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(d) Tribal development through better education and healthcare, and cultural visibility.

(e) Racist attitudes have reduced due to greater global exposure.

(2) Negative impacts

↳ Labour exploitation in developing nations like India.

↳ Wealth inequality has increased as highlighted by Oxfam's survival of the Richest report

↳ Digital media has been used to fan communalism

↳ Regional imbalances of growth have occured

↳ Divide between rural & urban growth has also been enacerbated through digital divide.

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Way forward

1. Leveraging digitisation to promote regional balance in human development ~~Eg~~ through e-Sanjeevani
2. Focussing on skilling and education to reduce disparity of opportunities.
3. Emulating Singapore's ethnic integration Programme through inclusive education.
4. Strengthening the role of civil society organisations to boost social capital
5. Sachar Commission's recommendation of an equal opportunities commission be implemented

Thus, inclusive growth through globalisation requires adherence to a spirit of common brotherhood [Article 51A(e)] to minimise social exclusions.

VisionIAS

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19. क्या आपको लगता है कि भारत में त्योहारों के व्यावसायीकरण ने इन आयोजनों के सामाजिक महत्त्व को कम कर दिया है? (उत्तर 250 शब्दों में दीजिए)

Do you think that commercialisation of festivals in India has overshadowed the social significance of these events? (Answer in 250 words) 15

India is a spiritual yet materialistic society and this can be seen from the increasing commercialisation of our festivals also.

Reasons for commercialisation

1. Rise of conspicuous consumption culture based on display of affluence.
2. Globalisation has increased materialism in our society.
3. Increasing wealth and rise of a new middle class post LPG reforms.
4. Festivals and culture are dynamic and always evolving.
5. Role of social media ~~and~~ as a tool of social comparison.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

However, it has not overshadowed the cultural significance of festivals.

Enduring significance despite commercialisation

① Value transmission function of festivals has remained intact.

② It has enhanced our soft power and global influence
Eg Holi celebrated worldwide.

③ Social media has also been used positively to spread timeless values of our festivals.

④ They have become crucial means of community engagement.
Eg Janmashtami festivals in Bombay.

⑤ The spiritual element has not been altered. Eg Diwali puja is still observed.

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Some concerns
- → Consumption of Intoxicants, gambling, etc.
- → Rising Individualism
- → celebrating responsibly by using low-polluting crackers

Thus festivals and culture generally is inherently fluid and evolve over time. However, we should ensure that the true message of these is not lost and is passed over generations.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

20. स्वतंत्र भारत के प्रारंभिक वर्षों में क्षेत्रीय पहचान की उत्पत्ति का आधार क्या था? बाद के दशकों में आर्थिक कारकों ने क्षेत्रवाद को कैसे प्रभावित किया? (उत्तर 250 शब्दों में दीजिए)

What was the basis of formation of regional identities in the early years of independent India? How did economic factors in the later decades influence regionalism? (Answer in 250 words) 15

Owing to British designs and our ~~natural~~ own diversity, India emerged as a highly fractured polity right from our independence.

Early forms of regional identity

① Linguistic demands for statehood were the most influential criteria.
Eg Visalandhra movement.

② Emergence of castes as regional political groups.
Eg Through the Dravidian movement

③ In some cases, religion also became a basis.
Eg Sikh separatism and the Khalistani movement.

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① Ethnic identity and tribal culture
Eg Nagaland

② Cultural variations & distinctions.

Role of economic factors - later decades

① Regional disparities of growth
Eg Uttarakhand & Chattisgarh

② Local resource exploitation and lack of equal development

③ Land deprivation of locals and perceptions of widening economic divide
Eg Telangana movement.

④ Agricultural distress and rural crisis. Eg Vidarbha movement.

⑤ Variations in overall growth and perceptions of bias in fiscal federalism
Eg South Indian sub-nationalism

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Government measures to maintain unity

① Fazl Ali commission
↳ 7th constitutional amendment
↳ SRA, 1956-

② Inter-state councils under Art. 263

③ Zonal & North Eastern councils

④ River Boards Act & ISWD Act, 1956 under Article 262.

⑤ Official Languages Act, 1963.

⑥ NITI Aayog & GST council (Article 279A)

Thus, some push and pull is natural in a diverse nation. The government has been successful in managing these inherent tensions to ensure national unity & sovereignty.

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GENERAL STUDIES (TEST CODE : 2905)

Name of Candidate	KSHITIJ ADITYA SHARMA		
Medium Eng./Hindi	ENGLISH	Registration Number	45933652
Center	ONLINE	Date	23-08-2024

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
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9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH.**
   इसमें बीस प्रश्न हैं **हिन्दी और अंग्रेजी** में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

Is student recommended for One-to-One mentoring?

Recommended	**Strongly Recommended**

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EVALUATION INDICATORS

1. **Contextual Competence**
2. **Content Competence**
3. **Language Competence**
4. **Introduction Competence**
5. **Structure - Presentation Competence**
6. **Conclusion Competence**

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

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All the Best

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q1. स्पष्ट कीजिए कि पूंजीगत व्यय में उल्लेखनीय वृद्धि के बावजूद भारतीय रेलवे के परिचालन अनुपात में कोई सुधार क्यों नहीं हुआ है। (150 शब्दों में उत्तर दीजिए)

Explain why there has been no improvement in the operating ratio of the Indian Railways despite the marked increase in its capital expenditure. (Answer in 150 words) 10

In recent years, the operating ratio of the railways has been stagnant at around 97-98%.

Reasons for lack of improvement in OR

① Heavy subsidisation of prices for public transit → around 58%.

② Muted revenue from goods transport due to shift towards highways.

③ competition from newer modes of transport on longer routes.

④ slow pace of track network expansion

⑤ Heavy expenditure on maintenance of tracks increasing fixed costs.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Measures to augment operating ratio

① Privatisation along select routes to reduce operational costs.

② Gradual enhancement of prices for consumer transit

③ Reduce cross-subsidisation through freight to make it more lucrative.

④ Better linkages to and among major ports

⑤ Revenue maximisation from auxiliary services like catering, tour packages etc.

Thus, the lifeline of the country can be made more sustainable through minor enhancements in revenue generation.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q2. मानव पूंजी और आर्थिक संवृद्धि के बीच संबंध का परीक्षण कीजिए। भारत में मानव पूंजी निर्माण को प्रभावित करने वाले मुद्दों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए)

Examine the relationship between human capital and economic growth. Discuss the issues affecting human capital formation in India. (Answer in 150 words) 10

In recent years the government has laid great stress on human capital formation through a saturation approach of welfare schemes.

Relationship of human capital & economic growth

① Quality skilling is a prerequisite for industrial growth as less than 20% of Indians are skilled.

② Better healthcare translates to reduced sickness - enhanced productivity

③ Social safety of women directly affects female LFPR (currently ~38%)

④ Better education ~~and~~ and literacy for better awareness of rights.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

⑤ Social stability is crucial to gain more foreign investment.

Factors affecting human capital formation

① Regional disparities in access to basic services.

② Rural - urban divide manifests through shortage of teachers and doctors.

③ caste based disabilities
Eg 48% of tribals are multi-dimensionally poor.

④ Availability of basic physical infrastructure.

⑤ Availability of benefits at the ground level - leakages, etc.

Thus, there is a need to focus on GYAN → Yasib, Yuva, Annadata & Nari to boost our human capital formation.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q3. चर्चा कीजिए कि भारत अपने जलवायु संबंधी लक्ष्यों को प्राप्त करने और संधारणीय विकास को समर्थन प्रदान करने के लिए हरित वित्त-पोषण तक पहुंच में कैसे वृद्धि कर सकता है? (उत्तर 150 शब्दों में दीजिए)
Discuss how India can increase access to green financing to achieve its climate targets and support sustainable development? (Answer in 150 words) 10

It is estimated that the developing world needs around 6 Tn USD by 2030 to reach even half of their INDCs [economic survey 2024]

Need for green financing

① Enable just and equitable transition from fossil fuels.

② Promote R&D into green energy eg National green H_2 mission

③ Focus on adaptation measures to mitigate losses.

④ Balancing sustainable growth and climate equity.

⑤ Loss and damage to communities already facing harm.

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Measures to augment green finance

① Global recognised green Bonds issued by the sovereign.

② Tools at domestic level like:
→ Green credits (under MoEFCC)
→ Carbon trading scheme (by Electricity Act, 2001)

③ considering a Just energy Transition Partnership (JETP) like Indonesia has done.

④ Insisting on equitable finance flows from developed world at COP-29

⑤ Innovative products like Municipal Green Bonds ~~eg~~ Indore in 2023.

Thus, by accessing more green finance, India can achieve the goals of SDG-13, 14 & 15 on an equitable basis.

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Q4. विकेंद्रीकृत नवीकरणीय ऊर्जा (DRE) को अपनाने की स्थिति क्या है? इसे अपनाने में आने वाली चुनौतियों का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

What is the status of adoption of Decentralized Renewable Energy (DRE)? Examine the challenges faced in its adoption. (Answer in 150 words) 10

Decentralised Renewable Energy (DRE) refers to the adoption of small scale energy generation technologies that reduce the distance between the energy source and market.

Status of Adoption of DRE

① The green Hydrogen Mission focuses on a grid model to generate 5 MMT GH_2 by 2030.

② Budget 2021 has focussed on Small Modular Reactors through PPP.

③ Schemes like SATAT, GOBARdhan and waste to energy for biofuels at local levels.

④ Progress on geothermal energy is slow.

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Challenges to adoption

① Biggest challenge → economies of scale as these are not cost effective.

② Low levels of R&D in new tech like Green H_2.

③ will require significant private sector participation. Eg SHIP project

④ For some sources of energy like Green H_2 & biogas, safe storage is also a concern.

Way forward
- → Incentives to private sector to participate.
- → Collaboration with global key players.
- → Green credits to incentivise production.

Thus, DRE has a bright future in our journey towards achieving our Panchamrit goals including net zero by 2070.

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Q5. भारत, विश्व का सबसे बड़ा दाल उत्पादक और उपभोक्ता देश है, लेकिन विडंबना यह है कि वह अपनी मांग को पूरा करने के लिए आयात पर निर्भर है। इस असंतुलन के लिए उत्तरदायी प्रमुख कारणों का परीक्षण कीजिए। (उत्तर 150 शब्दों में दीजिए)

India, the world's largest producer and consumer of pulses, ironically relies on imports to meet its demand. Examine the major reasons for this imbalance. (Answer in 150 words) 10

India imports 1/6th of global production of pulses despite being a major producer herself.

Reasons for import dependence

① Rice/wheat bias in farming

② Low access to HYVs in most pulses limits output

③ vegetarian demand for protein in India – heavy reliance on pulses.

④ ~~Largely~~ Largely limited to dryland farming areas. ~~Eg~~ Rajasthan is the largest producer.

⑤ Higher MSP on pulses has failed in signalling changing requirements.

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Way forward

① Promotion of more R&D to develop new HYVs.

② State level incentives to switch to pulses. ~~Eg~~ As done by Haryana

③ Promoting cultivation of pulses beyond dryland areas.

④ Prevent adverse climatic impacts of excess heat that reduce productivity.

⑤ Promoting rotational cropping to ~~pro~~ boost soil health as well as production.

Thus, India can become a net exporter in pulses too through technological interventions and augmenting supply side measures.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q6. भारत जैसे विकासशील देश के लिए संसाधन दक्षता एवं चक्रीयता क्यों महत्वपूर्ण है? (उत्तर 150 शब्दों में दीजिए)

Why is resource efficiency and circularity significant for a developing country like India? (Answer in 150 words) 10

At COP-26, India made a global pitch for circularity and use efficiency by launching the LiFE movement.

Significance of resource efficiency and circularity

① Economic Survey 2024 → can help meet 20% of decarbonisation target.

② Reduce dependence on other nations for critical minerals.
eg China – 90% of all lithium processing.

③ Plugging access gaps due to wastage

④ Lowers the ICOR (Incremental Cost to output Ratio) of industries.

⑤ Reduces environmental externalities created from wastage

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⑥ Reduces the cost of clean energy transition.

Way forward to boost RUE & circularity

① Promoting the right to repair movement ~~Eg~~ MOCI portal for R2R.

② Incentivising transition to clean energy ~~Eg~~ Surya Ghar scheme

③ Adopt the targets of the LiFE movement.

④ Ministry of Power's AC @ 24°C campaign.

⑤ Investing in R&D for recycling of critical minerals.

⑥ Promoting waste to energy tech

Thus- we can balance ecological sustainability and economic growth through resource efficiency and circularity

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q7. भारत आपदा नियोजन, शमन और प्रतिक्रिया संबंधी अपनी कार्यविधि को बेहतर बनाने के लिए भौगोलिक सूचना प्रणाली (GIS) की क्षमताओं का उपयोग किस प्रकार कर सकता है? (उत्तर 150 शब्दों में दीजिए) (उत्तर 150 शब्दों में दें)

How can India harness the capabilities of Geographic Information Systems (GIS) to enhance its approach to disaster planning, mitigation, and response? (Answer in 150 words) 10

The development of GIS technology can have a transformative impact on all stages of disaster management to prevent loss of lives, livelihoods and property.

Methods of leveraging GIS in DRR

① Planning techniques

↳ Zonation using ISRO's Bhuvan portal

↳ Detection of steep slopes and dangerous topography.

↳ ISRO's experimental EWS in Uttarakhand for landslides can help plan evacuation.

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② Mitigation

↳ use of IRNSS data for management of traffic flows in hazard affected areas.

↳ Sharing information on shelters and rehabilitation facilities through GPS.

↳ Better EIA in high risk zones.

③ Response

↳ use of GPS to detect trapped persons ~~tag~~ what3words app

↳ use of Infrared and LIDAR to find bodies

↳ Provisioning & prioritising aid in affected areas.

Thus, GIS can help reduce the impact on human lives and better manage vulnerabilities.

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(इस भाग में कुछ ना लिखें)

Q8. भारतीय कृषि में वैज्ञानिक अनुसंधान एवं तकनीकी नवाचार संबंधी एम.एस. स्वामीनाथन के योगदान पर चर्चा कीजिए। (उत्तर 150 शब्दों में दें)

Discuss the contribution of M.S. Swaminathan to scientific research and technological innovation in Indian agriculture. (Answer in 150 words) 10

Shri MS Swaminathan is a Bharat Ratna awardee (2024) for his transformative impact on India's agricultural sector

Contributions of Shri Swaminathan

① Research on HYVs that aided the success of green Revolution.

② Helping farmers adopt modern and scientific practices in farming.

③ MS Swaminathan committee made recommendations to make farming more sustainable, including the Swaminathan formula. (2X1.5)

④ Argued for Evergreen Revolution

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to make farming more resilient.

(5) Swaminathan Institute, Bangalore continues to aid the development of agriculture.
↳ development of hybrids.

(6) Promoted global cooperation and foundation of ICRISAT, Hyderabad.

(7) Major role in formulation of NICRA policy, 2011.

Results of his research & technological contributions
→ Food security
→ Reduced geopolitical leverage → PL 480.
→ sustainability of farming has increased
→ environmental consciousness in agriculture.

Thus, Mr. Swaminathan's contributions to agriculture are unparalleled by any other personality.

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(इस भाग में कुछ ना लिखें)

Q9. डीपफेक तकनीक से उत्पन्न होने वाले सुरक्षा संबंधी खतरों पर चर्चा कीजिए। इन खतरों से निपटने के लिए आवश्यक उपाय सुझाइए। (उत्तर 150 शब्दों में दीजिए)

Discuss the security threats arising out of deepfake technology. Suggest measures that are needed to tackle these threats. (Answer in 150 words) 10

Deepfakes refer to the imposition of visual traits on visual media representing a person using AI techniques.

Security threats from Deepfakes

① Tool of grey zone warfare

② Inflame political tensions through doctored videos.

③ Massive amplification of fake news and propaganda

④ Identity theft and impersonation of security officials.

⑤ Damage to diplomatic relations & global image.

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(इस भाग में कुछ ना लिखें)

Measures to tackle deepfakes

① Mandatory watermarking of deepfakes ~~Reg~~ As done by OpenAI.

② Adopt Asilomar Principles on safe use of generative AI.

③ Strengthen global cooperation based on the Bletchley Declaration on Frontier AI.

④ ~~Stricter~~ Stricter laws on impersonation and identity theft

⑤ Use AI/ML on social media to flag deepfakes.

Thus, governments and private companies need to keep apace the development of countermeasures to ~~prevent~~ address security threats from deepfakes.

VisionIAS

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q10. भारत की समुद्री सुरक्षा को बनाए रखने में भारतीय तटरक्षक बल (ICG) क्या भूमिका निभाता है? (उत्तर 150 शब्दों में दीजिए)

What is the role played by the Indian Coast Guard (ICG) in safeguarding the maritime security of India? (Answer in 150 words) 10

Indian coast guard was raised in 1977 as the nodal agency for safety of our territorial waters, EEZ and maritime boundaries.

Significance of ICG to maritime security

1. Patrolling the territorial sea (12 nautical miles) & EEZ (200 nautical miles)
2. complementing the role of the Indian Navy in the EEZ.
3. Hot pursuit of traffickers and criminals.
4. enforcement of anti-~~pir~~ piracy provisions of UNCLOS, 1982
   ↳ Articles 100-102

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

(5) Provide aid to fishermen who sometimes breach marine borders. ~~Eg~~ ~~to~~ along Pak & Sri Lanka marine borders.

(6) Providing HADR in coastal areas.

Some recommendations to augment role

(1) Theatrisation to form Integrated Maritime command.

(2) complete jurisdiction be given over ~~both~~ both territorial sea & EEZ.

(3) strengthen coordination with state Maritime Police

(4) Technology upgradation of vessels and paraphernalia.

Thus, the ICG is a crucial cog in the wheel of our SAGAR aspiration.

VisionIAS

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q11. कामकाजी आयु वर्ग की बढ़ती जनसंख्या हेतु रोजगार सृजित करने के लिए श्रम-गहन विनिर्माण का मार्ग अपनाने में भारत द्वारा सामना की जाने वाली बाधाओं पर चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

Discuss the hindrances that India faces in following the path of labour-intensive manufacturing to generate employment for the rising working age population. (Answer in 250 words) 15

In recent years, India's employment elasticity has dropped to 0.15% per 1% GDP growth (Labour Bureau data).

Challenges in labour intensive employment

① Low levels of formal skilling → less than 20% in 2022.

② Low female LFPR especially in urban areas (total ~38% in 2023)

③ Declining FDI due to global adverse economic condition.

④ Weak infrastructure and regional disparities

⑤ MSME dwarfism as highlighted by economic survey.

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Don't write anything this margin (इस भाग में कुछ ना लिखें)

⑥ Declining quality of jobs

⑦ Low levels of formalisation of the economy. (90% informal jobs as per Labour Bureau)

government initiatives
- → Budget 2023 – Employment Linked Incentives
- → New Labour codes to reduce compliance burden
- → PM-KVY
- → Focus on SHGs to boost female LFPR.

Way forward

① Expedite adoption of new labour laws by all states

② Implement NEP, 2020 measures to focus on vocational education.

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③ Nudging private capital formation to generate more jobs through multiplier effects.

④ economic survey 2024 recommends the German/Swiss model of apprenticeship.

⑤ Focus on scaling up SHGs and MSMEs + promoting formalisation

⑥ Focus on emerge sectors like textiles, pharma, etc. through PM-MITRA scheme

Thus, the surest way to reap our demographic dividend and to become Viksit Bharat by 2047 is through maximising employment avenues for inclusive growth.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

Q12. मिडिल इनकम ट्रैप क्या है? भारत स्वयं को इस ट्रैप में फंसने से कैसे बचा सकता है? (उत्तर 250 शब्दों में दीजिए)

What is middle-income trap? How can India prevent itself from falling in the trap? (Answer in 250 words) 15

Middle Income Trap refers to a ~~gro~~ range of per-capita GDP beyond which a very few nations are able to progress. due to slowing down of economic growth.

Causes of Middle Income Trap

① jobless growth characterised by weak employment elasticity.

② Low growth in real wages due to runaway inflation ~~eg~~ Argentina

③ Stagnant GDP growth ~~eg~~ Brazil

④ Failure to reap demographic dividend for economic growth

⑤ Untenable sovereign debt levels.

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Risks for India

① Low levels of growth in quality employment

② stagnant wages in the agricultural sector + disguised unemployment.

③ wide regional disparities in economic output

Eg Maha v. Bihar despite comparable populations.

④ Persistent informalisation of economic growth

⑤ Low employability

Eg only 52% of Indian workers are employable.

Measures to prevent falling into the trap

① Leverage the crowding-in potential of infrastructural development.

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② Accelerate transition to employment intensive growth through industrial sector.

③ Explore PPP models for better skilling. ~~Reg~~ Singapore model.

④ PLI ~~targets~~ benefits should be binded to employment generation targets.

⑤ Focus on boosting productivity through mechanisation.

⑥ Augment the economic participation of women.

Thus, as Dr. Gita Gopinath argues India should focus on generating more employment in the medium term to prevent the middle income trap.

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Q13. भारत में भू-स्वत्वाधिकार (Land titles) अस्पष्ट क्यों हैं? स्पष्ट भू-स्वत्वाधिकार भारत के सामाजिक-आर्थिक लक्ष्यों को प्राप्त करने में कैसे गति प्रदान कर सकते हैं? (उत्तर 250 शब्दों में दीजिए)

Why are land titles in India unclear? How can clear land titles provide an impetus to achieve India's socio-economic goals? (Answer in 250 words) 15

India still follows the age-old system of presumptive model of land titling, but strides are being made towards conclusive titling of land

Reason for unclear titling

① Non-updation of colonial era land records.

② Low pace of digitisation of the records.

③ Previously high levels of informal tenancy and subinfeudation.

④ Abuse of Benami land transfers

⑤ Botched land reforms failed due to limited ground level impact.

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Significance of conclusive & clear titling of land records.

① Reduce litigation that goes on for decades.

② easy collateralisation of land will enable credit access to farmers.

③ Liquidity of land as an asset increases.

④ Land acquisition becomes less cumbersome

⑤ Reduced land grabbing from the poor & vulnerable.

⑥ Promotes easier land pooling for increasing productivity.
Eg Haryana model of land pooling.

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government initiatives
- → DILRMP
- → SVAMITVA scheme
- → Telangana blockchain enabled Dharini Portal

Way forward

① expediting the pace of creation of digital land records.

② Budget 2024 → digitise cadastral maps

③ Establish land banks based on the digitised lands.

④ Adopt Telangana model of using blockchain (mentioned above)

⑤ create a transparent digital database of land ownership.

⑥ Bhu-Aadhar generation

Thus, conclusive titling can help to make land a more productive asset and reduce constraints of land for infrastructural growth.

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Q14. भारत में सार्वजनिक वितरण प्रणाली (PDS) के सामने आने वाली विभिन्न चुनौतियों के लिए PDS का डिजिटलीकरण कैसे एक अचूक समाधान बनकर उभरा है? इस संबंध में 'स्मार्ट-पीडीएस' पहल की क्षमता पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)

How has digitization of Public Distribution System (PDS) emerged as a panacea for various challenges faced by the PDS in India? Comment on the potential of 'SMART-PDS' initiative in this regard. (Answer in 250 words) 15

The Shanta Kumar committee had noted upto 60% diversion of PDS grains in 2016. However, this problem appears to be declining through digital reforms.

Digital PDS as a panacea

1. Reduction of leakages of PDS grains during distribution
2. Data on utilisation of PDS at various points of sale
3. Better outcome management through target tracking.
4. Wastage can be reduced through regular point-based checks.

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(5) Generate an aggregated profile of beneficiaries on the basis of Aadhar data

Features of SMART PDS

(1) Use of smart ration cards

(2) Recording of fingerprint data to reduce inclusion errors.

(3) Automation of the PDS process to reduce human intervention.

Potential of SMART-PDS

(1) Reduce the diversion by intermediaries during the supply process.

(2) Enhanced T-PDS system for better supply management.

(3) Greater transparency & accountability of fair price shops.

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- Online grievance redressal based on the record of transactions.

Broader implications
- → Food security
- → Poverty alleviation
- → Promotes digital literacy
- → Rationalising subsidies based on real demand.

Thus, SMART-PDS can have a transformative impact by promoting the economy, efficiency & effectiveness of the PDS system to achieve ~~SDG-2~~ SDG-2 (Zero hunger).

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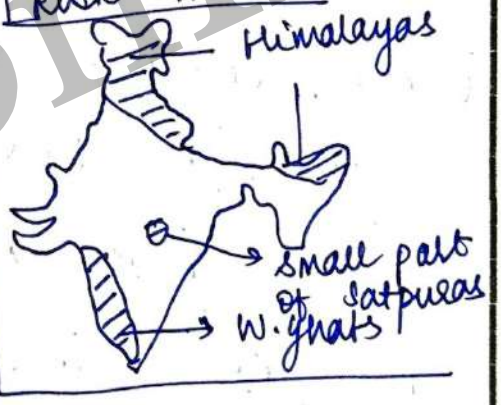
Q15. भारत में भूस्खलन के शमन और इसे रोकने में विद्यमान चुनौतियों का उल्लेख कीजिए। राष्ट्रीय भूस्खलन जोखिम प्रबंधन रणनीति, भूस्खलन आपदा संबंधी तैयारियों और शमन को किस प्रकार मजबूत कर सकती है और मुख्यधारा में ला सकती है? (उत्तर 250 शब्दों में दीजिए)

Mention the challenges in landslide mitigation and prevention in India. How can the National Landslide Risk Management Strategy strengthen and mainstream landslide disaster preparedness and mitigation? (Answer in 250 words) 15

As per GSI data around 15% of our landmass is prone to landslides.

Challenges to mitigation and prevention

Risk Areas



① unconsolidated nature of soil in the Himalayas.

② Tectonic activity and presence of fault lines ~~eg~~ Vaikrita fault near Joshimath

③ Steep slopes and escarpments in the Western ghats.

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④ Rising effect of GLOFs & cloud bursts that aid landslides.

⑤ erosional activity of rapid rivers and changing river courses.
Eg Wayanad landslide, 2024.

Significance of National Landslide Risk Management Strategy (NLRMS)

① Proper zonation of high risk areas Eg ISRO's BHUVAN portal.

② capacity building & awareness generation among locals.

③ augmenting preparedness against the disaster

④ use of digital technology to mitigate risk Eg Goa SATARK App.

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(5) Reducing anthropogenic risk factors in such areas.

(6) ~~Eg~~ Through proper EIA in risky terrain.

(6) Use of early warning systems to reduce impact.

(7) Drills and exercises to aid evacuation and preparedness.

~~Eg~~ ISRO's experimental EWS in Uttarakhand.

Other Suggestions
- → Adopt better land management based on indigenous knowledge
- → Hong Kong model of soil nailing
- → Using geotextiles

Thus, the NLRMS can help reduce vulnerability to landslides and promote a healthier relationship with the environment.

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Q16. नेट जीरो उत्सर्जन की ओर बढ़ने की आवश्यकता क्यों है? भारत ने नेट जीरो लक्ष्य को प्राप्त करने के लिए क्या रणनीति अपनाई है? (उत्तर 250 शब्दों में दें)

Why is there a need to move towards net zero emissions? What strategy has India adopted to achieve the net zero target? (Answer in 250 words) 15

The IPCC's synthesis Report suggests that on our current trajectory, the global temperature can rise by up to 2.7°C by 2100, far breaching the Paris Agreement goals.

Need to move towards net zero

① Reduce rising environmental hazards due to global warming
~~tog~~ 50% increase already in Arabian sea cyclones.

② Prevent food insecurity caused by agricultural unsustainability.

③ Prevent a global refugee crisis induced by climate change

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④ Prevent impacts on vulnerable groups like tribals, coastal communities, etc.

⑤ Ensure that economic growth is not jeopardised by reduced productivity and economic insecurity due to heatwaves.

India's Net Zero strategy

① Economic survey 2024 places a heavy emphasis on LiFE movement as it can accelerate decarbonisation.

② Focus on just and orderly transition towards green energy.

③ Phasing down, not phasing out, fossil fuels.

④ Achieving 500 GW energy from non-fossil fuels by 2030.

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(5) Strengthening Nature Based Solutions like mangroves, rural forestry, etc.

(6) LEAD-It 2.0 launched at COP-28 to promote industry transition

(7) Promoting carbon sequestration
↳ 3 Bn tonnes carbon sink by 2030

(8) Promoting local capacity in solar energy, green hydrogen, small modular reactors etc.

(9) Industry incentives through carbon trading scheme & green credits.

(10) Promoting circular economy by Gobardhan, SATAT, etc.

Thus, our approach is based on the universality of laws of nature to move towards net zero by 2070.

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(इस भाग में कुछ ना लिखें)

Q17. भारत में सटीक चिकित्सा (Precision medicine) को अपनाने से जुड़े लाभ और चुनौतियां क्या हैं? (उत्तर 250 शब्दों में दीजिए)

What are the advantages and challenges associated with the adoption of precision medicine in India? (Answer in 250 words) 15

Precision medicine refers to the utilisation of information of the patients unique genetic & epigenetic traits for medical purposes.

Advantages of Precision medicine

① cure previously incurable conditions.
eg Nexcar 19 leukaemia

② Very high success rate based on unique physiological traits.

③ Reduction of adverse effects created by general medicine

④ can be used in cases of congenital diseases for prevention.

⑤ Faster and less painful recovery process.

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[challenges to precision medicine]

① Prohibitively high medical costs
~~eg~~ CAR-T therapy costs Rs 6Cr+ in UK.

② unknown impacts on other body parts – limited R&D on adverse effects

③ Privacy of the patient sharing genetic information

④ ethical concerns of inequitable access barriers.

⑤ In India, availability of trained manpower is also a concern

⑥ consumers may take time to trust such procedures and give acceptance

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Way forward

1. Promoting more R&D into precision medicine
2. Develop PPP models for augmenting government capacity.
3. Boost collaboration with leading nations like Israel.
4. Creating strong safeguard mechanisms against misuse of genetic data.
5. Promoting skilling in the field to reduce manpower constraints

Thus, precision medicine can reduce the burden of life threatening diseases and offer less invasive procedures for healthcare

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Q18. वेब 3.0 के मूलभूत सिद्धांत और वे प्रमुख प्रौद्योगिकियां जिन पर यह आधारित है, क्या हैं? इसके संभावित लाभ बताइए। (उत्तर 250 शब्दों में दीजिए)

What are the foundational principles of Web 3.0 and the key technologies on which it is based? State its potential benefits. (Answer in 250 words) 15

Web 3.0 is a more inclusive and decentralised conception of the world wide web to address the contemporary challenges of equity, control & inclusiveness.

Foundational principles of web 3.0

① Decentralised nature rather than total control by one entity.

② User autonomy based on primacy of consent.

③ Democratic internet based on equal voice for all.

④ Control over own data rather than unauthorised use.

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(5) ownership of all of the tools used in the digital space.

Key technologies

(1) Blockchain to ensure integrity of the data.

(2) creation of DAOS based on democratic principles.

(3) edge computing rather than centralised processing.

(4) cryptocurrency for transactions on web 3.0.

(5) NFTs to evidence ownership, + creating contractual obligations ~~Reg~~ tokenisation of e-contracts to ensure non-repudiation.

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[Potential Benefits]

① Prevent data monopolisation by large corporations.

② More voice to the people in shaping the internet as per their needs & values.

③ Privacy and anonymity to prevent surveillance.

④ More safety in virtual spaces and ability to exercise the right to be forgotten.

⑤ Reduced threat of cybercrimes.

Thus, web 3.0 can make the internet more democratic & inclusive and uphold the primacy of users over their own data.

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Q19. वित्तीय लेन-देन की जटिलता और प्रौद्योगिकी के आपराधिक उपयोग के कारण परंपरागत एंटी-मनी लॉन्ड्रिंग (AML) रणनीतियाँ अपर्याप्त सिद्ध हो रही हैं। टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)

Traditional anti-money laundering (AML) tactics are proving inadequate due to the complexity of financial transactions and the criminal use of technology. Comment. (Answer in 250 words) 15

The World Bank warns that global money laundering may have exceeded USD 4 trillion, aided by new means of operation and technology.

Newer threats
- → Use of cryptocurrency
- → VPN & dark web to mask identity
- → Hawala transactions have gone online
- → FPIs and tax havens hinting traceability.

Constraints of traditional AML tactics

① ever evolving nature of technological advancements that reduce governmental oversight.

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② Use of P-Notes, complex corporate structures and planning masks the source of funds.
Eg Paradise papers expose

③ Role of state actors like Pakistan in promoting money laundering and organised crime.

④ Privacy laws in developed nations weaken legal assistance treaties against money laundering.

⑤ Fragmented domestic infrastructure to tackle money laundering.

Way forward to tackle new challenges

① Adopt Wolfsberg Principles of Transparency International against money laundering.

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② stricter enforcement of PMLA- 2002 against crypto frauds.

③ Use of AI/ML to intercept illicit flows of money.

④ strengthen KYC norms of RBI against ~~AMI~~ use of bank accounts.

⑤ educate the general public to not act as 'mules'.

⑥ stronger border management stronger CIBMS to curb associated organised crimes.

⑦ strengthen global cooperation, especially with major tax havens.

Thus, addressing the emerging threats would require greater vigilance and cooperation among nations & among domestic agencies.

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Q20. सीमावर्ती क्षेत्रों में बुनियादी ढांचे का विकास न केवल सीमा सुरक्षा के संदर्भ में बल्कि क्षेत्र के विकास के लिए भी किस प्रकार गेम चेंजर सिद्ध हो सकता है? (उत्तर 250 शब्दों में दीजिए)

How can infrastructure development in the border areas be a game changer not only in terms of border security but also for the development of the region? (Answer in 250 words) 15

In recent years, the government has been focussing on 'stronger border infrastructure through schemes like BADP, Vibrant villages Programme & PM-DeVINE.

Significance of infra development to border security

① Plug leakages in porous borders.
Eg Myanmar border

② overcome challenges of difficult terrain. Eg Along the LAC.

③ Reduce organised crimes like drug trafficking or gun running.

④ Deny safe haven to insurgents
Eg NSCN(K) fighters fleeing to Myanmar.

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⑤ Better management of cultural linkages across borders Eg Kukis across India & Myanmar

Significance for regional growth

① Reduce conflict due to resource constraints

② Boost to Act East Policy and regional integration. Eg IMT trilateral project

③ Reduce out migration from border areas. Eg Vibrant Villages

④ Harness immense horticultural potential of the region.

⑤ Saturation of welfare schemes like Aspirational Districts Program through better infrastructure

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[Way forward]

① Expedite the implementation of the Madhukar Gupta committee suggestions.

② Focussing on arterial roads and highways for flow of goods people & troops as required.

③ Promote local industry to bring private investment.

④ Following due process to prevent animosity in land acquisition.

⑤ Gradually ease AFSPA to promote regional integration.

Thus, the aspiration of 'Purvodaya' requires crowding-in of capital formation to boost both security and economic growth.

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